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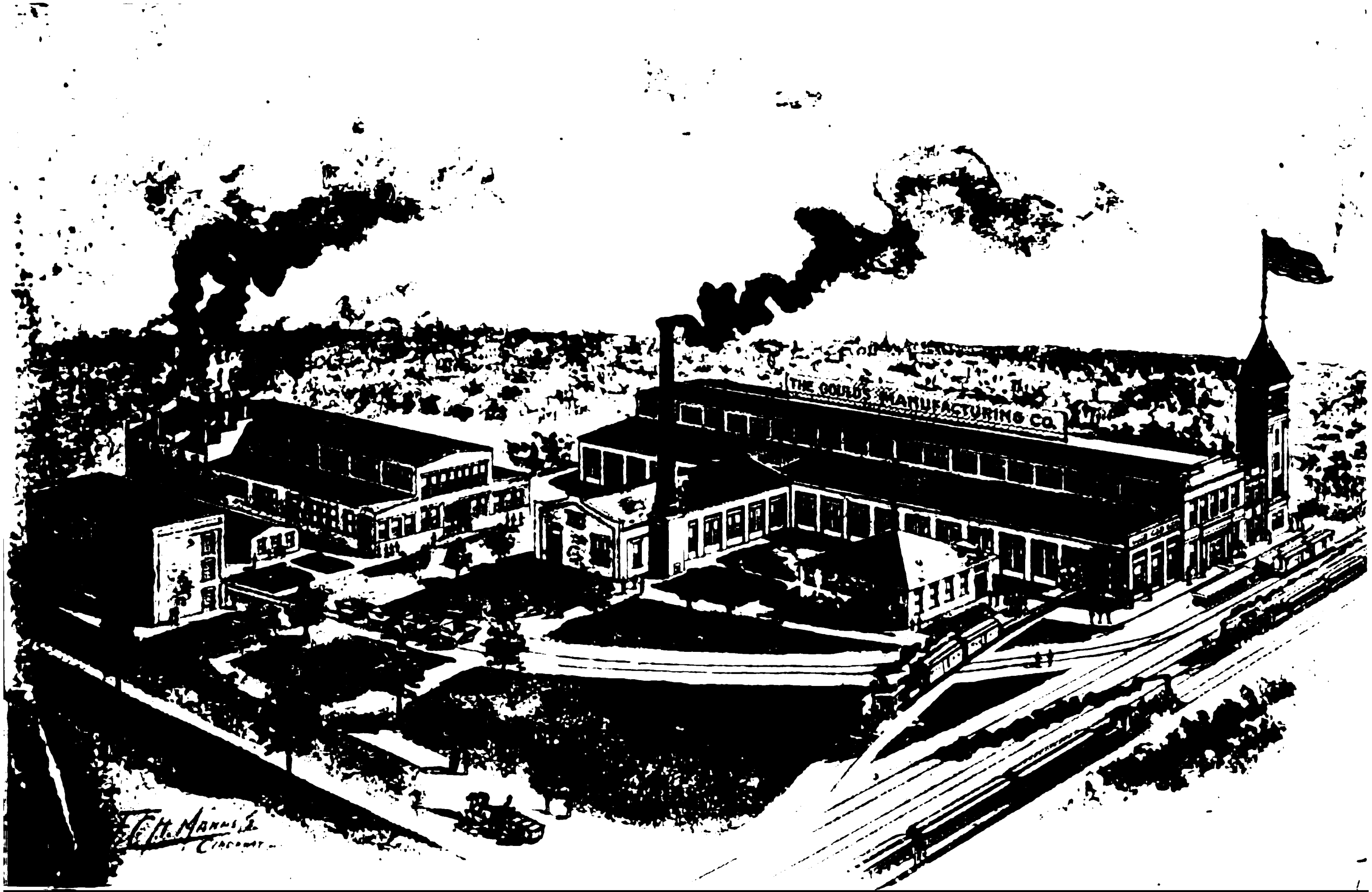
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A Catalogue of Pumps and Hydraulic Machinery for Every Service ...

Goulds Pumps, Inc

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THE WENBORNE-SUMNER CO.,
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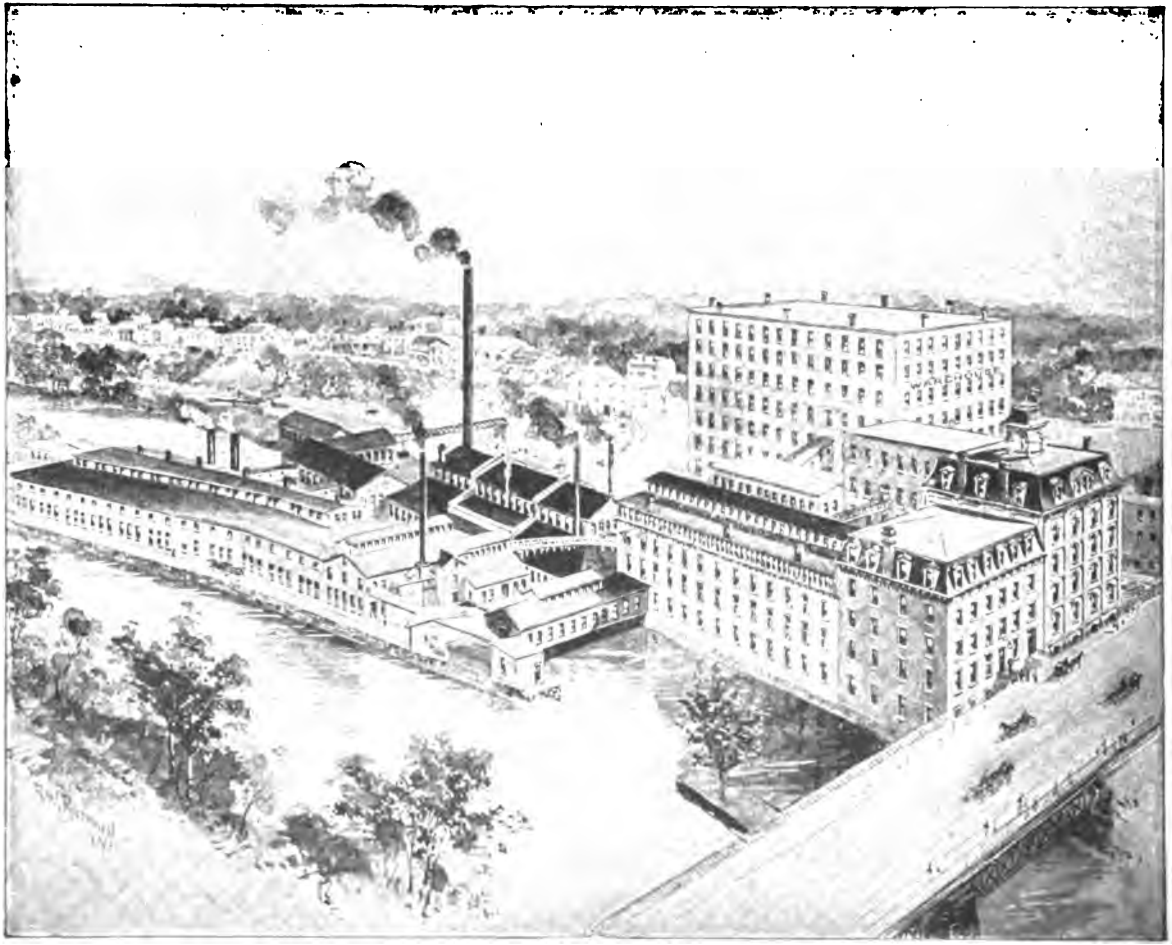

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USEFUL NOTES
ON
PUMPS AND HYDRAULIC MACHINERY.

There are certain conditions requisite to the successful operation of any Pumps—these factors are briefly:

SUCTION PIPE.—This is the pipe below the lower valves, whether the valves are in the Pump itself or in the cylinder a number of feet below the Pump (yet above the surface of the water), and in practical working should not exceed twenty-five feet in vertical height at sea level, and proportionately less at higher levels. See Table of Barometric Pressure, page 317. This pipe may, however, extend almost any distance horizontally, if care is taken that it fall evenly along its entire length from Pump or Cylinder to water supply. In this connection, as well as in long vertical suction pipes, we urge the use of a foot or check valve, provided pipe is protected from frost, as it retains water when Pump is not in use. Properly, the suction pipe of Single-Acting Cylinders and Pumps should be half the diameter of working barrel, and in suction pipes 100 feet or more in length, or with Pumps working fast, it may be increased, as is true of Double-Acting Pumps.

CONNECTING OR DELIVERY PIPES.—The first term is applied only to pipe between Pump Standard and Lower Barrel or Cylinder, and the last to same pipe as well, but more especially to describe pipe carrying water beyond Pump to any point. These pipes in Single-Acting Pumps may be a trifle smaller than suction pipe. In Double-Acting Pumps they should be same size, and care should be exercised that both are amply large.

HOT WATER.—No Pump will draft hot liquids any distance for the reason that the vapor or steam rising from the liquid passes through the suction pipe into the Pump and fills it with vapor instead of water. Therefore, for pumping hot liquids, the Pump should be placed as near supply as practicable, or better, under flooded suction, forcing the liquid upward instead of lifting it by suction. A hot-water Pump always requires metal valves throughout, and should be so ordered.

LIFT AND FORCE.—In connection with each Pump we give approximate or safe working limit (feet head of water or equivalent pressure) to which Pumps are adapted. While there are many factors, such as time of service, care and condition of Pumps which cannot be estimated or considered, we think our recommendations will generally answer a perplexing question.

See pages 317 to 323 for Tables of Pump Capacities, Power, Speed, etc., together with rules for estimating same.

TELEGRAPHIC CIPHER CODE.

Wishing to give our correspondents every facility for transmitting telegraphic or cable inquiries, orders, etc., at the least possible expense, we have adopted the following expressions with cipher words opposite. We also use the A. B. C., Lieber, and Commercial Cable Codes. Any of these codes may be used in addressing us and we can reply by same medium.

GENERAL EXPRESSIONS.

SAPLUFO	What cable code do you use ?
SAPLUHI	We are waiting to hear from you in reply to our letter of ——
SCOXAT	Have sent you at —— important communication relating to ——
SCOYAN	Have received no remittance from —— please investigate.
SITE	Please reply immediately by telegram.
SKATER	Have sent you this address important communication relating to ——
STAUDOT	We do not understand the —— word of cable.

RELATIVE TO PRICES AND TERMS.

INQUIRY.

SEENAT	Quote lowest price on ——
SHOWER	Quote us lowest price by wire on ——
STATIDU	Will you accept order for —— at —— per cent discount from list ?
STATIEL	Will you accept order for —— at $—— boxing extra ?

ANSWER.

SERFOAL	We quote for immediate acceptance.
SERFOBS	We will accept your order at prices named.
SERFODO	We cannot accept your order at prices named.
SERFUBR	Terms cash with order.
SERFVAN	Terms cash on receipt of invoice.
SERFVET	Terms sight draft with bill of lading.
SERFVOW	Terms thirty days net.
STATEOP	Our lowest price on —— boxing extra is $——
STATEUS	Our lowest price on —— boxing free is $——
STATICO	The highest discount we can give is —— per cent.
STAUCK	We have already given you our lowest quotations and cannot reduce them.

RELATIVE TO GOODS IN STOCK.

INQUIRY.	
SAPLUGO	How soon can you ship?
SHOW	At what price and how soon can you furnish?
SIGH	Have you in stock for immediate shipment?
SIZER	Have order for ——. How soon can you ship?

ANSWER.	
SEEMIG	We can ship at once from stock.
SEEMOT	Could ship in —— days.
SEEMUP	Could ship promptly if ordered immediately.
STATEMO	Cable received. Will ship immediately.
STATENU	Cable received. Will ship in a few days.

RELATIVE TO ORDERS AND SHIPMENTS.

SCRIACK	When will you ship —— ?
SCRIADO	Has shipment been made of our order? ——
SCRIAET	Send tracer after goods not received.
SEER	Ship at once by railroad.
SEEK	Ship by sailing vessel.
SEINE	Ship at once by express.
SEDGE	Ship via steamer.
SHIRLER	Duplicate our order of ——
SHOER	Delay shipping order ——. Have written.
SIEVE	Give preference over all others to order ——.
SILLER	Enter order for ——, and ship as soon as possible.
SKIFFEN	Telegraph when you will ship our order ——.
TUP	Prepare for immediate shipment against receipt of our letter this day.
SCRIAFS	We will ship today.
SEABAB	We will ship promptly.
SEABATH	We will ship on receipt of order.
SEABELL	We have entered your order and will ship as soon as possible.
SEABENT	Your order is completed. Please send shipping instructions immediately.
SEABERB	Will ship in one week.
SEABESO	Will ship middle of this week.
SEABIBS	Will ship last of this week.
SEABICT	Will ship in two weeks.
SEABIDU	Will ship in ten days.
SEABIFD	Shipment has been made.
TILTIVE	If order or shipment —— has not been shipped, hold for further advices.

RELATIVE TO CLASSES OF GOODS.

SALTIOT	Cistern Pumps.
SALTIUL	Well Lift and Force Pumps.
SALTIVA	Well Pump Standards and Working Heads.
SALTIWG	Wind Mill Pump Standards.
SALTIXO	Wind Mill Force Pumps.
SALTOB	Pump Cylinders.
SALTOCK	Irrigating Pumps.
SALTODS	Centrifugal Pumps.
SALTOES	Power Pumps.
SALTOFA	Spray Pumps.
[illegible]	Rotary Pumps.
[illegible]	Yard Hydrants, Street Washers, etc.
SALTUFO	Hydraulic Rams.
SALTUGX	Church and School Bells.
SALUBA	Pump repairs.
SALUCK	Well Points.
SALUDVO	Garden and Fire Engines.
SALUEN	Hose Carts, etc.
SALUFOS	Double-Acting Force Pumps.
SAPLODO	Iron Fitted.
SAPLUB	Brass Fitted.
SAPLUCK	Regular suction and discharge.
SAPLUDS	Suction and discharge ——.

CISTERN PUMPS, PITCHER SPOUT PUMPS AND WELL PUMPS

are, perhaps, the best known and in more general use than any other class.

The Cistern Pump may be placed over a cistern near the house, although it is more often situated under cover, especially in cold climates.

The Pitcher Spout Pump is largely used for the same purposes as the Cistern Pump and, in addition, is many times used in warm climates, over shallow dug or driven wells.

Well Pumps shown are but two of our many styles of Lift and Force Pumps which can be adapted, by changing location of cylinder, for dug, driven or drilled wells from 25 to 50 feet deep. See pages 6 to 29.

GOULDS CISTERN SUCTION PUMP.

WITH ADJUSTABLE EARS AND BRASS VALVE SEAT.

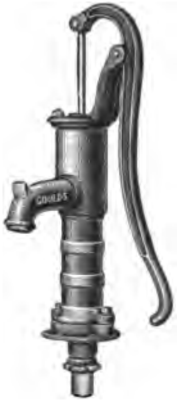

FIG. 1165

Fig. 1165 represents our new Cistern Suction Pump with revolving standard. The Cylinder is held in place by two adjustable ears, so that the spout can be placed in any position, and the valves are of easy access. The Nos. 0, 1, 2, 3 and 4 are fitted with brass tube valve seat, and the Nos. 5, 6 and 8 with brass bushed valve seat, fitted for either iron or lead pipe to order.

FIG. 1165 SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Iron.		Brass Lined.	
						Cipher.	Price.	Cipher.	Price.
0	2 in	3¾ in.	.042 gals.	1 in. pipe	25 ft.	Valewo	$3.50	Itensa	$5.50
1	2¼ "	5 "	.072 "	1 "	25 "	Valfaw	4.00	Itento	6.00
2	2½ "	5 "	.088 "	1¼ "	25 "	Valfel	4.50	Itenul	6.50
3	2¾ "	6¾ "	.145 "	1¼ "	25 "	Valffac	5.00	Itenvo	7.25
4	3 "	6¾ "	.171 "	1½ "	25 "	Valgac	5.50	Itenwu	8.00
5	3¼ "	7¼ "	.217 "	1½ "	25 "	Valged	6.50	Iteoba	9.50
6	3½ "	7¼ "	.250 "	1½ "	25 "	Valgis	8.00	Jambat	11.50
8	4 "	7¼ "	.327 "	2 "	25 "	Valgjg	10.00	Jambig	15.00

Brass Cylinder Pumps have Brass Plungers. *Brass Pumps* having all parts brass, except lever, bearer and base, furnished to order. We can fit any of our Cistern Pumps with brass lower valves and metal plunger to adapt them for hot water, at extra prices given below:

No. 0.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 8.
$1.15	$1.15	$1.40	$1.40	$1.40	$1.75	$1.75	$2.10

We can pack in an ordinary hogshead or cask about the following number of this and similar Pumps, according to sizes.

No. 0.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 8.
40	36	32	24	20	15	12	10

GOULDS CISTERN SUCTION PUMP.

WITH REVOLVING BEARER TOP AND SCREW BASE.

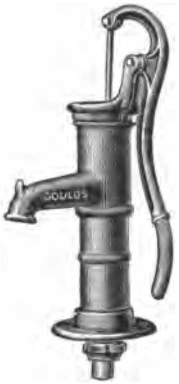

FIG. 198

Fig. 198, represented by cut, is one of our Cistern Suction Pumps. Revolving bearer top permits lever to be used in any desired position. The cylinder screws on outside of base. Brass suction tube is threaded to take wrought-iron pipe coupling, if gas-pipe is used, or cast-iron nut with brass tube, if lead pipe is used. Fitted for either lead or wrought-iron pipe, or both, as ordered. *Brass Cylinder Pumps* have Brass Plungers. *Brass Pumps*, having all parts brass except lever, bearer and base furnished to order.

FIG. 198. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction Fitted For.	Lift.	IRON.		BRASS-LINED.	
						Cipher.	Price.	Cipher.	Price.
0	2 in.	5 in.	.07 gal.	1 in. pipe	25 ft.	Abet	$3.50	Jambot	$5.50
1	2¼ "	6 "	.10 "	1 "	25 "	Able	4.00	Jambug	6.00
2	2½ "	6 "	.13 "	1¼ "	25 "	Ablush	4.50	Jambyx	6.50
3	2¾ "	6 "	.15 "	1¼ "	25 "	Abut	5.00	Jamcab	7.25
4	3 "	6 "	.18 "	1¼ "	25 "	Ace	5.50	Jamcil	8.00
5	3¼ "	6 "	.22 "	1½ "	25 "	Ached	6.50	Jamcod	9.50
6	3½ "	6 "	.25 "	1½ or 2 "	25 "	Acid	8.00	Jamcug	11.50
8	4 "	6 "	.33 "	2 in.	25 "	Acme	10.00	Jarrod	15.00

GOULDS CISTERN SUCTION PUMP.

WITH REVOLVING BEARER TOP AND BOLTED BASE.

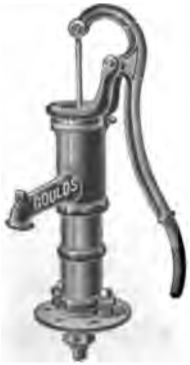

FIG. 199

Fig. 199 is another popular style of Cistern Pump. The lever can be turned to any convenient position. The valve seat is formed by brass tube and flange, and the end of tube threaded to take wrought-iron pipe coupling if gas pipe is used or cast-iron nut with brass tube is supplied, if lead pipe is used. Will fit for lead or wrought-iron pipe as ordered.

To prevent freezing, trip the lower valve by raising lever to extreme height, thus allowing water to leave cylinder. *Brass Cylinder Pumps* have Brass Plungers. *Brass Pumps* having all parts brass except lever, bearer and base furnished to order.

FIG. 199. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	IRON.		BRASS-LINED.		*BRASS CYLINDER.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	5 in.	.07 gal.	1 in. pipe	25 ft.	Acrue	$3.50	Jarrub	$5.50	Vicious	$5.50
1	2¼ "	6 "	.10 "	1 "	25 "	Actal	4.00	Jarryl	6.00	Vicount	6.00
2	2½ "	6 "	13 "	1¼ "	25 "	Adden	4.50	Jarsad	6.50	Victim	7.00
3	2¾ "	6 "	.15 "	1¼ "	25 "	Afaro	5.00	Jarsic	7.25	Victond	8.00
4	3 "	6 "	.18 "	1¼ "	25 "	Aftez	5.50	Jarsils	8.00	Victorv	10.00
5	3¼ "	6 "	.22 "	1½ "	25 "	Ageda	6.50	Jarsob	9.50	Victres	13.00
6	3½ "	6 "	.25 "	1½ "	25 "	Alder	8.00	Jarsum	11.50	Victual	18.00
8	4 "	6 "	.33 "	2 "	25 "	Almed	10.00	Jettist	15.00	Viduah	25.00

* *Brass Cylinder Pumps* have brass plungers. *Brass Pumps* having all parts brass except lever, bearer and base furnished to order.

We can fit our Cistern Pumps with brass lower valves and metallic packing for hot water, at an extra price. (See page XV.)

GOULDS CISTERN SUCTION PUMP.

WITH REVOLVING BEARER TOP AND BOLTED BASE

The cut shows our Fig. 200, with broad bearing and high base.

A substantial hub on the under side of the base has threads on it for coupling on an iron nut with gas-pipe threads cut in it for connecting wrought-iron pipe. Soldering tube is fitted in this nut when connection to lead pipe is desired To prevent freezing, raise lever to extreme height, thus allowing water to leave cylinder.

FIG. 200 SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	IRON.		BRASS-LINED.		*BRASS CYL.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	5 in.	.07 gal.	1 in. pipe	25 ft.	Aired	$3.50	Jetten	$5 50	Ember	$5.50
1	2¼ "	6 "	.10 "	1 "	25 "	Airy	4 00	Jettort	6 00	Emboss	6.00
2	2½ "	6 "	.13 "	1¼ "	25 "	Akin	4 50	Jettose	6 50	Emery	7.00
3	2¾ "	6 "	.15 "	1¼ "	25 "	Alas	5 00	Jetua	7.25	Emit	8.00
4	3 "	6 "	.18 "	1¼ "	25 "	Allied	5.50	Jetubc	8 00	Empty	10.00
5	3¼ "	6 "	.22 "	1½ "	25 "	Ally	6.50	Jetuck	9.50	Enact	13.00
6	3½ "	6 "	.25 "	1½ "	25 "	Alms	8.00	Jetuds	11 50	End	18.00
8	4 "	6 "	.33 "	2 "	25 "	Alsod	10.00	Juggob	15.00	Vigor	25.00

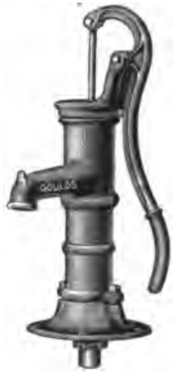

FIG. 200

GOULDS CISTERN SUCTION PUMP.

WITH REVOLVING BEARER TOP AND BRACKETS.

The cut, Fig. 202½, represents our new style Revolving Top Cistern Pump with brackets. This is in many instances a more convenient form than a Pump on base. It can be secured to the wall in any place desired, and made to take the least possible room. Has a brass valve seat with tube threaded to take wrought-iron pipe coupling, if gas pipe is used, or nut with soldering tube, if lead pipe is used.

FIG. 202½. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	IRON.		BRASS-LINED.		*BRASS CYL.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	5 in.	.07 gal.	1 in. pipe	25 ft.	Axe	$3.50	Juggul	$5.50	Epic	$5.50
1	2¼ "	6 "	.10 "	1 "	25 "	Black	4.00	Juggso	6.00	Epoch	6.00
2	2½ "	6 "	.13 "	1¼ "	25 "	Bad	4.50	Juggta	6.50	Equal	7.00
3	2¾ "	6 "	.15 "	1¼ "	25 "	Bagged	5.00	Jughab	7.25	Equip	8.00
4	3 "	6 "	.18 "	1¼ "	25 "	Bail	5.50	Jughid	8.00	Era	10.00
5	3¼ "	6 "	.22 "	1½ "	25 "	Balted	6.50	Jughot	9.50	Erect	13.00
6	3½ "	6 "	.25 "	1½ "	25 "	Bake	8.00	Jughus	11.50	Err	18.00

We can fit our Cistern Pumps with brass lower valves and metallic packing for hot water, at an extra price. (See page XIX.)

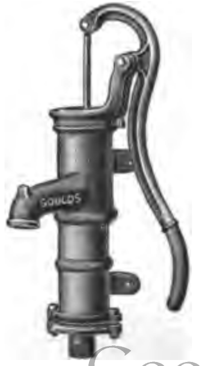

FIG. 202½

Brass Cylinder Pumps* have brass plungers. *Brass Pumps*, having all parts brass, except lever, bearer and base, **furnished to order.

GOULDS CISTERN SUCTION PUMP.

WITH REVOLVING BEARER TOP AND BOLTED BASE.

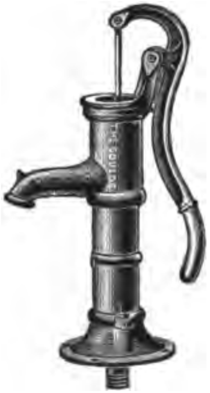

FIG. 201

Fig. 201 represents a Cistern Suction Pump, with revolving bearer top and bolted base. It is rather taller than Fig. 200, on preceding page. Base is bolted to Pump with leather packing between. Fitted for lead or wrought-iron pipe, or both, as ordered. To prevent freezing, raise the lever to extreme height, thus allowing water to leave cylinder.

FIG. 201. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Suc.	Capacity per Stroke.	Iron.		Brass-Lined.	
				Cipher.	Price.	Cipher.	Price.
0	2 in.	1 in.	.08 gal.	Alum	$4.00	Jughyl	$6.00
1	2¼ "	1 "	.10 "	Amid	4.50	Jugica	6.50
2	2½ "	1¼ "	.12 "	Arc	5.00	Jugido	7.00
3	2¾ "	1¼ "	.15 "	Arch	5.75	Jugify	8.00
4	3 "	1¼ "	.18 "	Arm	6.25	Jugiga	8.75
5	3¼ "	1½ "	.20 "	Army	6.75	Justizo	9.75
6	3½ "	1½ "	.25 "	Art	8.00	Jusuba	11.50
8	4 "	2 "	.33 "	Ask	10.00	Jusuck	15.00

GOULDS CISTERN SUCTION PUMP.

WITH REVOLVING BEARER TOP, DOUBLE ROD AND GUIDE.

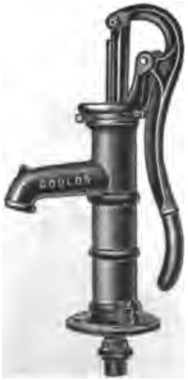

FIG. 210

The cut shows one of our Cistern Pumps, with double rods and guide rod. So constructed, they work with more uniform stroke, and are on this account much preferred in some localities. In other respects they are just like our other Cistern Pumps.

Fitted for lead or wrought-iron pipe, or both, as ordered.

FIG. 210. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction Fitted for.	Lift.	Iron.		Brass-Lined.		*Brass Cylinder.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	2¼ in.	6 in.	.10 gal.	1¼ in. pipe.	25 ft.	Scofed	$5.00	Jusudo	$7.00	Virtual	$7.00
2	2½ "	6 "	.13 "	1¼ "	25 "	Scoff	5.50	Jusufu	7.50	Virtue	8.00
3	2¾ "	6 "	.15 "	1¼ "	25 "	Birdseye	6.00	Jusuga	8.25	Bonded	9.00
4	3 "	6 "	.18 "	1¼ "	25 "	Scoop	6.50	Jusugil	9.00	Virulen	11.00
6	3½ "	6 "	.25 "	1½ "	25 "	Scope	9.00	Keepjan	12.50	Virus	19.00
8	4 "	6 "	.32 "	2 "	25 "	Score	11.00	Keepku	16.00	Visage	26.00

We can fit our Cistern Pumps with brass lower valves and metal packing for hot water, at extra price. (See page XIX.)

* ***Brass Cylinder Pumps*** have brass plungers. ***Brass Pumps***, having all parts brass, except lever, bearer and base, furnished to order.

GOULDS SEMI-FLUID SUCTION PUMP.

WITH REVOLVING BEARER TOP AND DOUBLE ROD AND GUIDE. METALLIC FITTED

The cut represents our Fig. 444, built for pumping molasses, syrups of any kind, tar, oil, or any other liquids of any consistency, either hot or cold. The piston, piston rod, valves and connecting tube of the iron Pumps are made of brass, while the balance is constructed of iron. When ordered of brass, the whole Pump is made of that metal except the base, top and lever, and is so constructed that no iron is brought into contact with the liquid.

When used for hot liquids we would urge placing the Pump as close to them as possible, as the vapors arising will qualify the vacuum produced by the Pump.

Fitted for lead or wrought-iron pipe connections, as ordered.

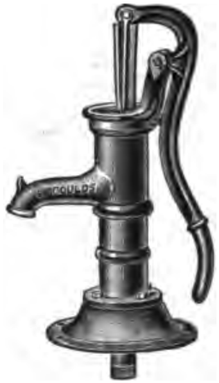

FIG. 444

FIG. 444. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Iron.		Brass.	
						Cipher.	Price.	Cipher.	Price.
2	2½ in.	6 in.	.13 gal.	1¼ in. pipe	25 ft.	Felly	$12.00	Forcep	$20.00
4	3 "	6 "	.18 "	1½ "	25 "	Fond	15.00	Ford	25.00
6	3½ "	6 "	.25 "	1½ "	25 "	Fontal	17.00	Forel	30.00
8	4 "	6 "	.33 "	2 "	25 "	Food	21.00	Forge	36.00
10	4½ "	6 "	.41 "	2½ "	25 "	Fopab	25.00	Forky	42.00

GOULDS SEWAGE SUCTION PUMP.

WITH BALL VALVES.

Fig. 1082, Sewage Suction Pump, has revolving bearer top, held in place by set screw, iron cylinder provided with brackets, and bolted lower attachment.

The valves are bronze balls, with bronze valve seats. This Pump is adapted for pumping sewage and similar work.

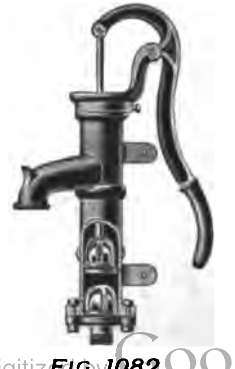

FIG. 1082

FIG. 1082. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Cipher.	Price.
6	3½ in.	6 in.	.25 gal.	1½ in.	25 ft.	Rudeds	$18.50
8	4 "	6 "	.33 "	2 "	25 "	Rudeel	21.50

GOULDS SPECIAL PITCHER-SPOUT PUMP.

WITH CLOSED REVOLVING BEARER TOP AND BOLTED BASE.

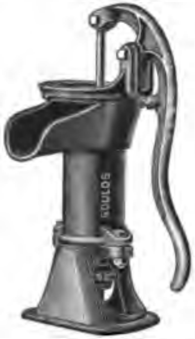

FIG. 923

Fig. 923 is our new closed-top Pitcher-Spout Pump. It is of less weight and bulk than our regular stock Pitcher Pump, but on that account not lacking in either strength or capacity, for it possesses both.

Again, one thousand of these Pumps can be transported for two-thirds the cost of same number of regular Pumps.

We build but the leading size specified below, and fit for iron or lead pipe or both, to order.

FIG. 923. SIZE, PRICE, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	IRON.	
						Cipher.	Price.
2	**3 in.**	**4 in.**	**.12 gal.**	**1¼ in. pipe**	**25 ft.**	**Weyed**	**$4.75**

NICKEL-PLATED CYLINDER PITCHER-SPOUT PUMP.

WITH CLOSED REVOLVING BEARER TOP AND BOLTED BASE.

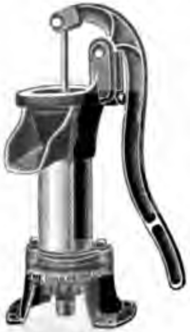

FIG. 1170

Fig. 1170 represents our new Pitcher-Spout Pump, which we offer with Nickel-Plated Seamless-Drawn Brass Cylinder. This Seamless-Drawn Brass Cylinder offers the most serviceable form of Cylinder and admits of attractive finish. Pump has revolving bearing top, galvanized plunger and rod ; cut-off base and connections for iron or lead pipe, to order. Our design and construction will recommend itself where a neat, compact Pump, in keeping with good surroundings, is required.

FIG. 1170. SIZE, PRICE, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	NICKEL-PLATED CYLINDER.	
						Cipher.	Price.
2	**3 in.**	**4 in.**	**.12 gal.**	**1¼ in. pipe**	**25 ft.**	**Loinac**	**$7.50**

GOULDS OPEN-TOP PITCHER-SPOUT PUMP.

WITH OPEN REVOLVING BEARER TOP AND BOLTED BASE.

Fig. 205 shows our standard Open-Top Pitcher-Spout Pump, so generally and favorably known throughout the world. Wherever a cheap but substantial Pump for use in house or over drive-well is required this Pump (or Fig. 205½, Closed Top) is a favorite. It has revolving bearer top. By lifting lever to extreme height valve is tripped, to prevent freezing. A suction nut, tapped to receive wrought-iron pipe, is furnished on the hub underneath base. Through this is introduced a soldering tube for lead pipe connection.

FIG. 205. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Iron.		*Brass-Lined.		*Porcelain-Lined.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	2½ in.	4 in.	.09 gal.	1 in. pipe	25 ft.	Baled	$4.25	Toledo	$6.50	Churuc	$6.50
2	3 "	4 "	.12 "	1¼ "	25 "	Balky	4.75	Tolles	7.25	Churva	7.25
3	3½ "	4 "	.17 "	1¼ "	25 "	Ball	5.25	Tolel	8.00	Churvic	8.00
4	4 "	4 "	.22 "	1½ "	25 "	Balmo	6.25	Tolling	9.00	Churwoc	9.00
5	4½ "	5 "	.34 "	1½ "	25 "	Band	9.50	Tombey	12.50	Chusab	12.50
6	5 "	5 "	.43 "	2½ "	25 "	Kidfat	17.00	Kidfig	22.00	Kidgob	22.00

**Brass-Lined* and *Porcelain-Lined Pumps* are furnished with galvanized plungers and rods.

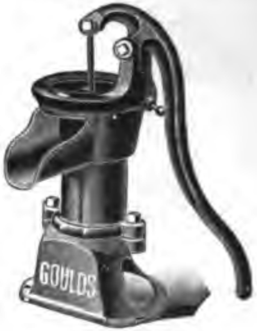

FIG. 205

GOULDS CLOSED-TOP PITCHER-SPOUT PUMP.

WITH CLOSED REVOLVING BEARER TOP AND BOLTED BASE.

Fig. 205½ shows our standard Tight-Top Pitcher-Spout Pump, so generally and favorably known throughout the world. It fills the requirement for a cheap but substantial Pump for use in house, over cistern or over drive wells. Lever can be turned to any desired position, and by raising lever to extreme height valves are tripped and cylinder emptied, to prevent freezing. A suction nut tapped to receive wrought-iron pipe is furnished on the hub underneath base. Through this is introduced a soldering tube for lead pipe connection.

FIG. 205½. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Iron.		*Brass-Lined.		*Porcelain-Lined.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	2½ in.	4 in.	.09 gal.	1 in. pipe	25 ft.	Banked	$4.25	Bonafide	$6.50	Cleaba	$6.50
2	3 "	4 "	.12 "	1¼ "	25 "	Barb	4.75	Briefness	7.25	Cleaboc	7.25
3	3½ "	4 "	.17 "	1¼ "	25 "	Barky	5.25	Cabinet	8.00	Cleabul	8.00
4	4 "	4 "	.22 "	1½ "	25 "	Barned	6.25	Casined	9.00	Clebber	9.00
5	4½ "	5 "	.34 "	1½ "	25 "	Keepla	9.50	Keeplog	12.50	Kidest	12.50
6	5 "	5 "	.43 "	2½ "	25 "	Keeplit	17.00	Kiddog	22.00	Kidetu	22.00

**Brass-Lined* and *Porcelain-Lined Pumps* furnished with galvanized plungers and rods.

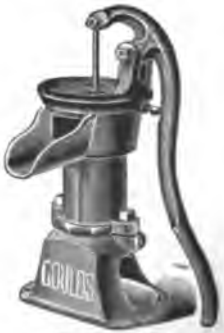

FIG. 205½

GOULDS VACUUM BASE PITCHER-SPOUT PUMP.

WITH CLOSED REVOLVING BEARER TOP AND PATENT VACUUM BASE.

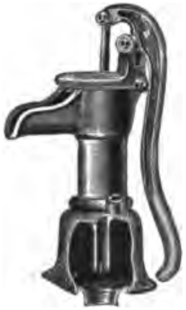

FIG. 208

Fig. 208 is the same as our Fig. 205½ (page 5), and in addition it has an improvement in the base of the Pump. Oftentimes in driven wells, where the soil is so close as to make an air-tight joint around the pipe, an ordinary Pump will not work well; while with the Vacuum Base Pump all difficulty is obviated, for by creating a vacuum in the base and permitting the water to form there a reservoir, a constant supply of water is obtained for the Pump. We fit them always for wrought-iron pipe, with the thread cut in the hub of the base.

FIG. 208. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	IRON.		*BRASS-LINED.		*PORCELAIN-LINED.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	2½ in.	4 in.	.09 gal.	1 in. pipe.	25 ft.	Birdy	$4.75	Chusif	$7.00	Crostic	$7.00
2	3 "	4 "	.12 "	1¼ "	25 "	Bite	5.25	Chusom	7.75	Crotan	7.75
3	3½ "	4 "	.17 "	1¼ "	25 "	Blast	5.75	Chusud	8.50	Crotco	8.50

* *Brass-lined* and *Porcelain-lined Pumps* have galvanized plungers and rods.

GOULDS ROUND-SPOUT PITCHER PUMP.

WITH CLOSED REVOLVING BEARER TOP AND BOLTED BASE.

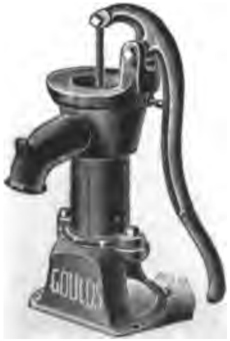

FIG. 209

Fig. 209 shows our new style Pitcher Pump, with a round spout. This construction prevents water from slopping over spout, and also provides means of hanging bucket upon the spout. This Pump is made like our other Pitcher Pumps, with revolving brake, bolt fastenings and cut-off base.

Fitted for wrought-iron pipe unless otherwise ordered.

To prevent freezing, raise lever to extreme height, thus allowing water to leave cylinder.

FIG. 209. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction Fitted for.	Lift.	IRON.		*BRASS-LINED.		*PORCELAIN-LINED.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	2½ in.	4 in.	.09 gal.	1 in. pipe.	25 ft.	Waled	$4.25	Clebjac	$6.50	Cleblok	$6.50
2	3 "	4 "	.12 "	1¼ "	25 "	Bleat	4.75	Clebkub	7.25	Clecac	7.25
3	3½ "	4 "	.17 "	1¼ "	25 "	Walk	5.25	Cleblip	8.00	Clecim	8.00

* *Brass-lined* and *porcelain-lined Pumps* have galvanised plungers and rods.

GOULDS "SOUTHERN STAR" LIFT PUMP.

FOR OUT-DOOR USE IN WARM CLIMATES.

We have frequent calls for a Suction and Lift Pump taller and heavier than our largest Cistern and Pitcher Pumps, and offer Fig. 607, which we build about 41 inches high.

It is provided with revolving bearer top and has a long heavy lever. The Pump stock acts as a cylinder, in which is the plunger, and can be emptied of water by raising the lever, thus tripping valve seated on the base. A strong brace gives rigidity to the Pump.

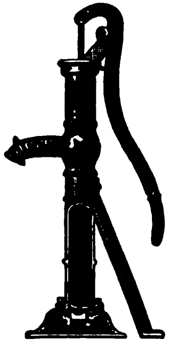

FIG. 607

FIG. 607. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Well Rod.	Lift.	Cipher.	Iron.
4	3 in.	6 in.	.18 gal.	1¼ in. pipe	7-16 in.	25 ft.	Moredy	$8.50
5	3¼ "	6 "	.22 "	1½ "	7-16 "	25 "	Morned	9.00

GOULDS "SOUTHERN STAR" FORCE PUMP.

FOR OUT-DOOR USE IN WARM CLIMATES.

This Pump is about 50 inches high, has revolving brake or fulcrum, a strong, heavy lever, and is in every way calculated to render good service. A thread is cut on the end of the spout, and with each Pump is sent a half hose coupling and nut for attaching hose.

As in Fig. 607, shown above, the plunger works in the stock of Pump, which can be emptied of water by raising the lever, thus tripping the valve in the base.

When ordered with cock spout we add $2.50 to list price.

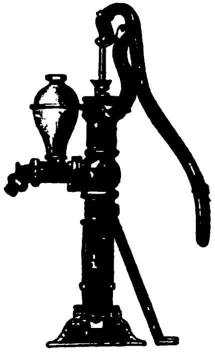

FIG. 608

FIG. 608. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Well Rod.	Discharge Fitted for	*Lift and Force.	Cipher.	Iron.
4	3 in.	6 in.	.18 gal.	1¼ in. pipe	7-16 in.	1 in. hose	50 ft.	Mort	$13.00
5	3¼ "	6 "	.22 "	1½ "	7-16 "	1 "	50 "	Mossy	14.00
6	3½ "	6 "	.25 "	1½ "	7-16 "	1 "	40 "	Mostack	15.00

*Total lift and force from supply to point of delivery, Pump not more than 25 ft. above water.

GOULDS "STAR" ANTI-FREEZING WELL LIFT PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

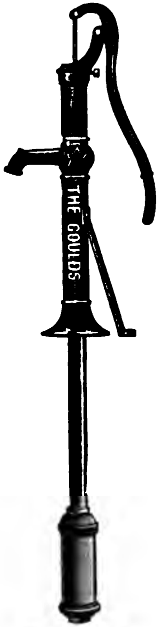

FIG. 1018

Light Standard.

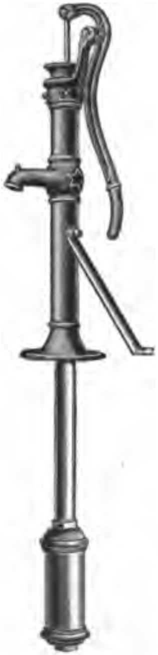

FIG. 550

Medium Standard.

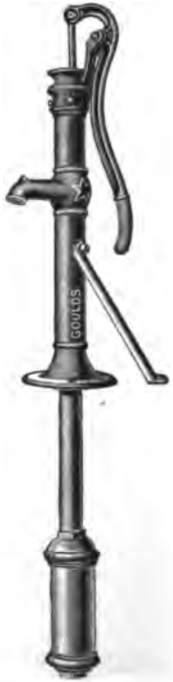

FIG. 551

Heavy Standard.

For description, table of sizes, prices, etc., see opposite page.

GOULDS "STAR" ANTI-FREEZING WELL LIFT PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

The Pumps illustrated on opposite page represent our line of Revolving Open-Top Anti-Freezing Well Lift Pumps, for out-door cisterns and shallow wells—dug, drilled or driven—where water is not more than 25 feet below ground line. These Pumps are similar in design, differing only in size and weight of Standard. As listed, Pumps are adapted for wells about 28 feet deep. By lowering cylinder to within 15 feet of the water, Pumps can be used in wells 40 to 50 feet in depth. Pumps are tapped and receive connecting pipe near spout, not at base. Pump base to bottom of cylinder, 4 feet.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

FIG. 1018. SIZE, PRICE, ETC.

No.	Cyl.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cyl.		Brass-Tube Cyl.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
4	3 x 10 in.	6 in.	.18 gal.	1¼ in. pipe	30 ft.	Diestock	$8.00	Altitudinal	$10.50	Biology	$12.50

FIG. 550. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	40 ft.	Vased	$8.25	Blushing	$10.75
4	3 x 10 "	6 "	.18 "	1¼ "	30 "	Vassal	8.50	Brinded	11.00
6	3½ x 10 "	6 "	.25 "	1½ "	30 "	Eobead	9.50	Broadcl	12.50

FIG. 551. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	50 ft.	Vastley	$8.75	Bunstle	$11.25
4	3 x 10 "	6 "	.18 "	1¼ "	40 "	Vasty	9.00	Canacu	11.50
6	3½ x 10 "	6 "	.25 "	1½ "	40 "	Vastel	10.00	Crotdun	13.00
8	4 x 10 "	6 "	.33 "	2 "	40 "	Eobeds	11.50	Crotjox	15.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

GOULDS "STAR" ANTI-FREEZING WELL LIFT PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

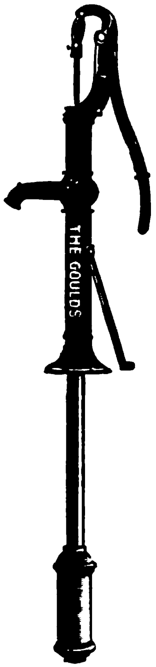

FIG. 1019

Light Standard.

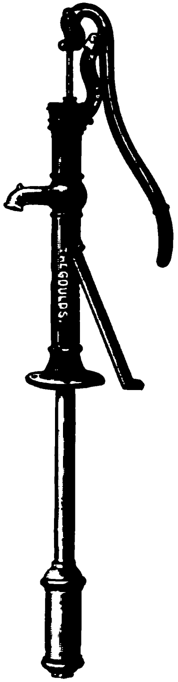

FIG. 848½

Medium Standard.

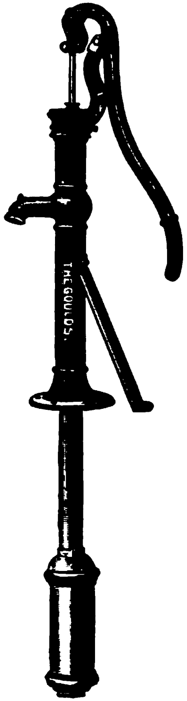

FIG. 848

Heavy Standard.

For description, table of sizes, prices, etc., see opposite page.

GOULDS "STAR" ANTI-FREEZING WELL LIFT PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

The Pumps, Figs. 1019, 848½ and 848, represented on opposite page, illustrate our line of Revolving Tight-Top, Anti-Freezing Set Length Pumps for shallow wells and cisterns. They are fitted with Tight Top, Polished Rod and Links above. This construction keeps plunger rod in perfect alignment and prevents all foreign substances getting into working parts of Pump. The general adaptations and capacities are tabulated below. Pumps are tapped and receive connecting pipe near spout, not at base. Pump base to bottom of cylinder, 4 feet.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat, to order at extra price.

FIG. 1019. SIZE, PRICE, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.		Brass-Tube Cylinder.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
4	3 x 10 in.	6 in.	.18 gal.	1¼ in. pipe	30 ft.	Divela	$8.75	Cusale	$11.25	Dancmul	$13.25

FIG. 848½. SIZES, PRICES, ETC

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	50 ft.	Weltud	$9.00	Diastem	$11.50
4	3 x 10 "	6 "	.18 "	1¼ "	30 "	Weltvd	9.25	Draclym	11.75
6	3½ x 10 "	6 "	.25 "	1½ "	30 "	Erripic	10.25	Dripal	13.25

FIG. 848. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	50 ft.	Wamble	$9.50	Elytah	$12.00
4	3 x 10 "	6 "	.18 "	1¼ "	40 "	Wammel	9.75	Elytale	12.25
6	3½ x 10 "	6 "	.25 "	1½ "	40 "	Easlade	10.75	Elytamb	13.75
8	4 x 10 "	6 "	.33 "	2 "	40 "	Easloat	12.25	Exaba	15.75

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

GOULDS "STAR" ANTI-FREEZING WELL LIFT PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

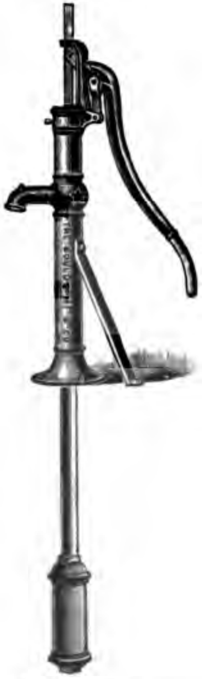

FIG. 1039

Light Standard.

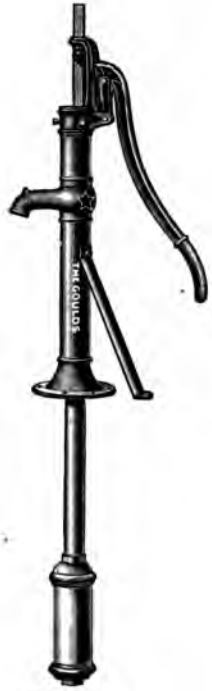

FIG. 553

Medium Standard.

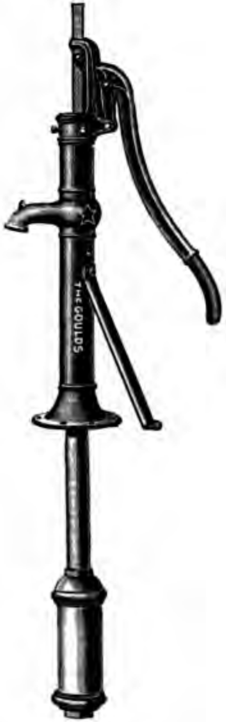

FIG. 554

Heavy Standard.

For description, tables of sizes, prices, etc., see opposite page.

GOULDS "STAR" ANTI-FREEZING WELL LIFT PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

Figs. 1039, 553, 554 represent our Anti-Freezing Lift Pumps, with revolving tight top, for shallow wells. In this style of Pump the rod is guided above and moves up and down in a vertical line without oscillating. It also constitutes a tight top, preventing all foreign substance from getting into working parts.

Pumps are tapped and receive wrought-iron connecting pipe near spout.

With special long, flat rods for wind mill, 50 cents extra list.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

FIG. 1039. SIZE, PRICE, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
4	3 x 10 in.	6 in.	.18 gal.	1¼ in. pipe	30 ft.	Divellac	$9.00	Fieldab	$11.50

FIG. 553. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	40 ft.	Vection	$9.25	Fieldip	$11.75
4	3 x 10 "	6 "	.18 "	1¼ "	30 "	Vector	9.50	Flemit	12.00
6	3½ x 10 "	6 "	.25 "	1½ "	30 "	Erripol	10.50	Firema	13.50

FIG. 554. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	50 ft.	Veda	$9.75	Firlal	$12.25
4	3 x 10 "	6 "	.18 "	1¼ "	40 "	Vedet	10.00	Flickon	12.50
6	3½ x 10 "	6 "	.25 "	1½ "	40 "	Flerno	11.00	Flujnob	14.00
8	4 x 10 "	6 "	.32 "	2 "	40 "	Fireout	12.50	Flushrd	16.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

GOULDS "STAR" ANTI-FREEZING WELL LIFT PUMPS.

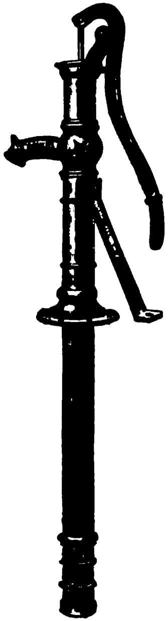

FIG. 206

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

Fig. 206 is adapted for out-door cisterns and shallow wells, where water is not to be lifted over 15 or 25 feet. It is composed of a standard, cast-iron connecting pipe and cylinder, having the valves in it. The internal diameter of the standard is a trifle larger than that of the cylinder; hence the plunger can be drawn up through it, repaired and replaced, if ever necessary. This Pump has screwed base.

Pump base to bottom of cylinder, 3½ feet.

Fig. 207 is similar in design to Fig. 206, but has wrought-iron connecting pipe. By adding to the connecting pipe and piston rod, and so dropping the cylinder farther into the well, until the cylinder is within, say, 15 to 20 feet of the surface of the water, this Pump could be used in wells from 30 to 40 feet deep. This Pump has bolted base. Base to bottom of cylinder, 4 feet.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

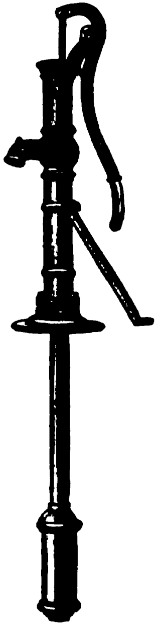

FIG 207

FIG. 206. SIZES, PRICES, ETC.

No.	Dia. Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lift.	IRON CYLINDER.		BRASS-LINED CYLINDER.	
						Cipher.	Price.	Cipher.	Price.
1	2 in.	6 in.	.08 gal.	1 in. pipe	25 ft.	Basrell	$7.00	Rawedo	$9.50
3	2½ "	6 "	.13 "	1¼ "	25 "	Beamed	8.00	Raweef	10.50
5	3 "	6 "	.18 "	1¼ "	25 "	Beard	9.00	Rawefs	11.50

FIG. 207. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	IRON CYLINDER.		BRASS-LINED CYLINDER.	
						Cipher.	Iron.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	40 ft.	Bendam	$8.00	Rawego	$10.50
4	3 x 10 "	6 "	.18 "	1¼ "	30 "	Bent	8.50	Rawehi	11.00
6	3½ x 10 "	6 "	.24 "	1½ "	30 "	Eobale	9.50	Raweld	12.50

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

GOULDS ANTI-FREEZING "STOCK" PUMPS.

LIFT PUMPS OF LARGE CAPACITY.

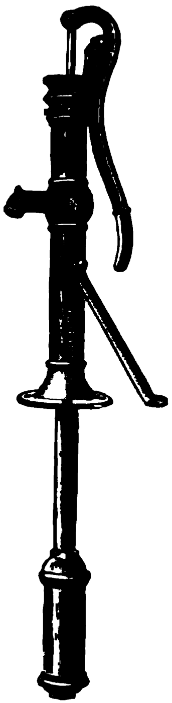

FIG. 552

Pumps shown on this page have large pumping capacity and have come into such general use among farmers having many head of stock to water that they are known to the trade as "Stock Pumps." They are also well suited for Town Pumps in shallow wells.

Fig. 552 stands 4 feet tall. The standard is of cast-iron, with revolving bearer top. Spout is large and waterways ample. Pipe used in set length is 1½ and 2-inch and screws into the standard just below the spout.

Fig. 1261 is made with wind mill top, having adjustable stroke 6, 8 or 10 inches. Equally adapted for pumping by hand or by wind mill. Spout is large, as is also the upper portion of the standard, which positively prevents any "slopping over," however fast the Pump is worked. Lower portion of standard is formed by a continuation of the 2-inch wrought-iron pipe which forms the set lengths. Base is adjustable.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

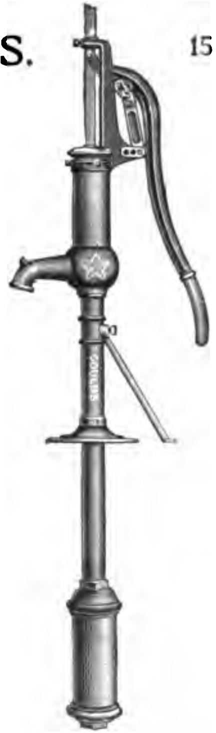

FIG. 1261

FIG. 552. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
6	3½ x 10 in.	6 in.	.25 gal.	1½ in.	40 ft.	Kidhat	$11.00	Kidhil	$14.00
8	4 x 10 "	6 "	.32 "	2 "	40 "	Vectuum	12.50	Kidkiss	16.00

FIG. 1261. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke at 10-in. Stroke.	Suction.	*Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
8	4 x 16 in.	Adjustable 6, 8, 10 in.	.54 gal.	2 in.	40 ft.	Knowof	$16.50	Knowvo	$20.00
10	4½ x 16 "		.69 "	2 "	40 "	Knowug	18.50	Knowyx	22.50

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*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water.

GOULDS WELL LIFT AND FORCE PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

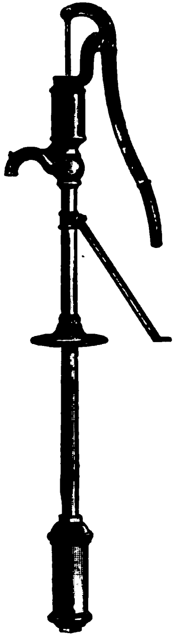


FIG. 1252

Figs. 1252 and 1153 illustrate our new Set Length Lift and Force Pumps with adjustable base and brace, syphon spout and revolving bearer top.

The principal feature of these new Pumps is the wrought-iron pipe stock with base and brace, which can be adjusted to meet any requirements of height of lever and spout. Under the base is a heavy malleable pipe nut, connecting standard with set length. This permits extension of set length with the least possible trouble. When so ordered, we can furnish stock or standard complete without set length, adapting it for any style of lower working cylinder.

Under Fig. 1252 we list Set Length Lift Pump, without stuffing box and hose coupling. Under Fig. 1153 Set Length Force Pump with stuffing box and hose coupling. Base to bottom of cylinder, 4 feet.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

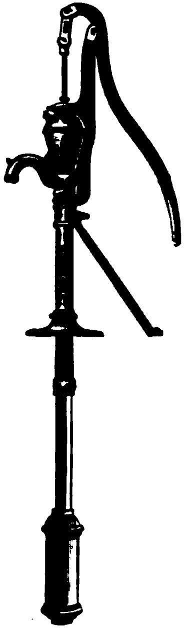


FIG. 1153

FIG. 1252. SIZE, PRICE, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Iron.		Brass-Lined Cylinder.		Brass-Tube Cylinder.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
4	3 x 10 in.	5 in.	.15 gals.	1¼ in. pipe	25 ft.	Harevu	$8.00	Harfab	$10.50	Knuba	$12.50

FIG. 1153. SIZE, PRICE, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined Cylinder.		Brass-Tube Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
4	3 x 10 in.	5 in.	.15 gals.	1¼ in. pipe	¾ in. hose	40 ft.	Harfact	$11.50	Harfbu	$14.00	Knubel	$16.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply point of delivery.

HEAVY ANTI-FREEZING LIFT AND FORCE PUMPS.

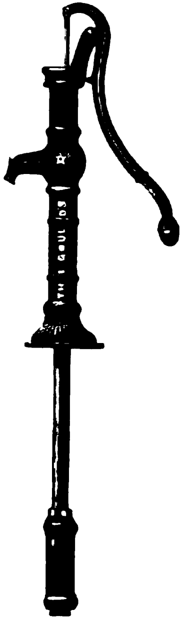


FIG. 1206

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

Fig. 1206 shows an open-top Well Lift Pump, for deep wells. It has heavy cast-iron stock, fitted with wrought-iron set length and cylinder; set length measures 48 inches from base of Pump to bottom of cylinder.

Fitted in this manner, Pump is adapted for wells of depth not exceeding 25 feet. Where required for deeper wells, cylinder may be lowered. We can supply extra lengths of pipe and rod for wells of any depth.

No. 6 Pump has 1½-inch pipe in set length.

No. 8 Pump has 2-inch pipe in set length.

Fig. 1207 shows our heavy Well Force Pump. General description of Lift Pump, Fig. 1206, will apply to this Pump also.

***When so ordered,* we can furnish Fig. 1207 with Compression Cock on spout at $2.50 extra list.**

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

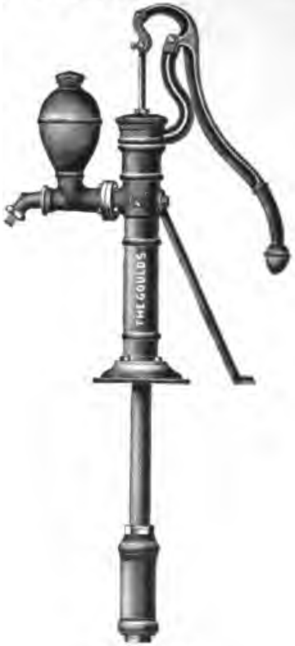


FIG. 1207

FIG. 1206. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Iron Cylinder.		Brass-Lined Cylinder.	
						Cipher.	Price.	Cipher.	Price.
6	3½ x 10 in.	6 in.	.25 Gal.	1½ in. pipe	25 ft.	Dagho	$12.00	Knubid	$15.00
8	4 x 10 "	6 "	.32 "	2 "	25 "	Dagliac	14.00	Knubju	17.50

FIG. 1207. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
6	3½ x 10 in.	6 in.	.25 gal.	1½ in.	1 in. hose	45 ft.	Churob	$18.00	Knubki	$21.00
8	4 x 10 "	6 "	.32 "	2 "	1 "	30 "	Chikam	20.00	Knubly	23.50

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply point of delivery.

GOULDS "STAR" ANTI-FREEZING WELL FORCE PUMPS.

ADAPTED FOR UNIVERSAL'' BRONZE VALVE AND SEAT.

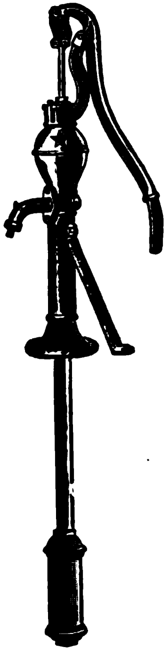


FIG. 1244

Medium Standard,
Bolted Spout.

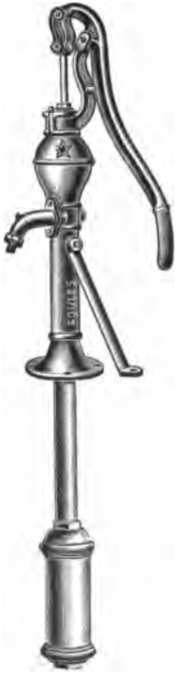


FIG. 852½

Heavy Standard,
Bolted Spout.

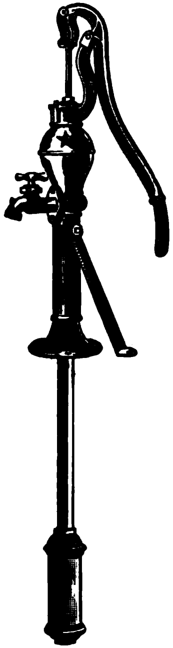


FIG. 1245

Medium Standard,
Cock Spout.

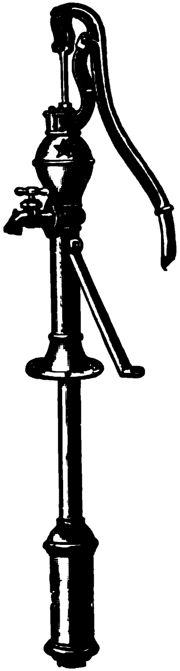


FIG. 882½

Heavy Standard,
Cock Spout.

For description and table of sizes, prices, etc. see opposite page

GOULDS "STAR" ANTI-FREEZING WELL FORCE PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

Figs 1254, 1255, 852½ and 882½ represent our "Star" Anti-Freezing Force Pumps. This style is especially adapted for garden, yard and stable use, being fitted for hose discharge. All have an outlet at back of spout for attaching pipe. They are tapped and receive connecting pipe near spout, not at base.

Figs. 1245 and 882½ have cock spout. Pump base to bottom of cylinder, 4 feet.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

FIG. 1244. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Fopross	$12.25	Fropbo	$14.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Frecofs	12.50	Fropcol	15.00
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Fropac	13.50	Fuchtac	16.50

FIG. 852½. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Wared	$12.75	Fucibad	$15.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Wareful	13.00	Fucidul	15.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Erripus	14.00	Gavaot	17.00

FIG. 1245. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Gavaux	$14.75	Genesun	$17.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Gavavo	15.00	Gipta	17.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Genesol	16.00	Giptale	19.00

FIG. 882½. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Warest	$15.25	Gintam	$17.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Warfare	15.50	Giptanc	18.00
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Erripy	16.50	Giptik	18.50

---

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS "STAR" ANTI-FREEZING WELL FORCE PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

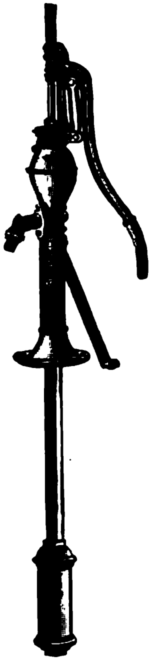


FIG. 1247

Medium Standard, Bolted Spout.

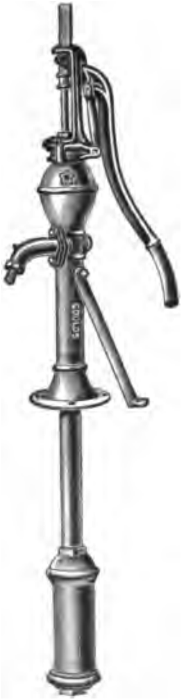


FIG. 424

Heavy Standard, Bolted Spout.

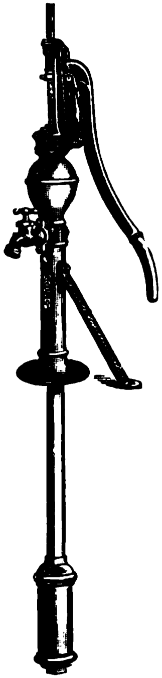


FIG. 1248

Medium Standard, Cock Spout.

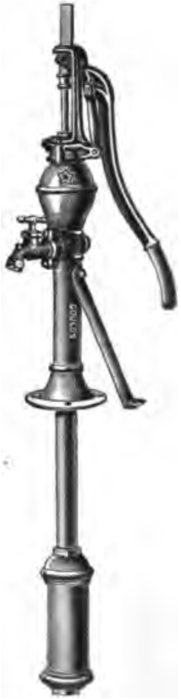


FIG. 426

Heavy Standard, Cock Spout.

For description and table of sizes, prices, etc., see opposite page.

GOULDS "STAR" ANTI-FREEZING WELL FORCE PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

Figs. 1247, 424, 1248 and 426 illustrate our "Star" Anti-Freezing Force Pumps, with Revolving Wind Mill Top. Our construction keeps plunger rod in perfect alignment, thus working in cylinder smoothly and evenly. Figs. 1248 and 426 have cock spouts. All are fitted with hose discharge. Pumps are tapped and receive connecting pipe near spout, not at base. Pump base to bottom of cylinder, 4 feet.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

FIG. 1247. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gals.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Giptome	$13.25	Glujwu	$15.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Gipula	13.50	Glujwyn	16.00
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Glujvo	14.50	Glukac	17.50

FIG. 424. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gals.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Vell	$13.75	Glukade	$16.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Vellet	14.00	Glukid	16.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Endnadu	15.00	Glukief	18.00

FIG. 1248. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gals.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Goldid	$15.75	Grandid	$18.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Goldiel	16.00	Grandog	18.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Gradka	17.00	Granduc	20.00

FIG. 426. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	Iron Cylinder.		Brass-Lined Cylinder.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gals.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Vogle	$16.25	Glukifs	$18.75
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Voglite	16.50	Glukode	19.00
5	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Endnip	17.50	Glukock	20.50

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS ANTI-FREEZING WELL FORCE PUMPS.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

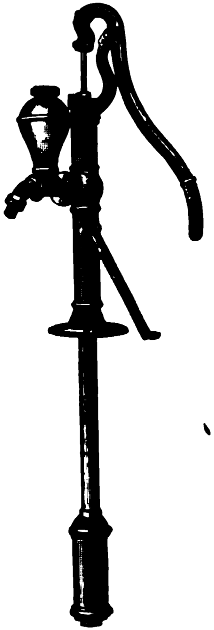


FIG. 854

Fig. 854 represents a new Well Force Pump with revolving bearer top, polished rod and links above. The cut will show its construction, and at the very low price it is offered, it represents good value We aim at simplicity of parts, and these adequately strong for purpose they are intended. Cock spouts furnished at $2.50 extra list.

Pump base to bottom of cylinder, 4 feet

Fig. 264 is a modification of our House Force Pump, rendered anti-freezing and adapted for outdoor wells, or those of any depth, by addition of set length and placing working parts—plunger and valve—below frost line and within suction distance of water. Water may be forced through upper discharge into pipe, or delivered at spout.

Pump base to bottom of cylinder, 4 feet.

Fig. 1229 (page 61) "Universal" Bronze Valve and Seat to order at extra price.

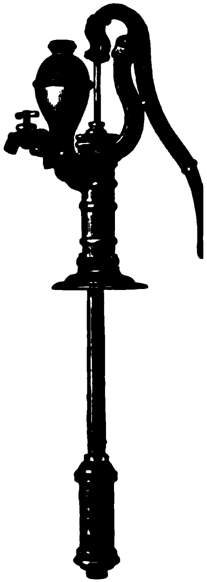


FIG. 264

FIG. 854. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	IRON CYLINDER.		BRASS-LINED CYLINDER.	
							Cipher.	Price.	Cipher.	Price.
3	2¾ x 10 in.	6 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	60 ft.	Watchin	$14.75	Knucab	$17.25
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " ¾ "	60 "	Watchma	15.00	Knucud	17.50
6	3½ x 10 "	6 "	.25 "	1½ "	1¼ " " ¾ "	45 "	Raptwed	16.00	Knudad	19.00

FIG. 264. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.	*Lift and Force.	IRON CYLINDER.		BRASS-LINED CYLINDER.	
							Cipher.	Price.	Cipher.	Price.
2	2½ x 10 in.	6 in.	.13 gal.	1¼ in. pipe	1¼ in. pipe and 1 in. hose	70 ft.	Clanish	$16.00	Knudec	$18.50
4	3 x 10 "	6 "	.18 "	1¼ "	1¼ " " 1 "	70 "	Clapped	18.00	Knufac	20.50

*Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from suppl to point of delivery.

GOULDS "UTILITY" ANTI-FREEZING FORCE PUMP.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

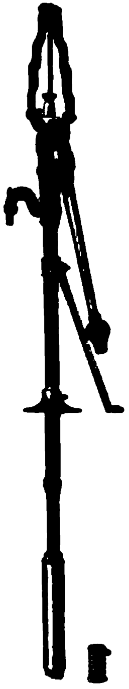


FIG. 1111

Fig. 1111 is a combined Lift and Force Pump. It has brass cylinder, and is adapted to deep or shallow wells. Reversible lever. Bearer top allows no side wear. Tight top and large air chamber, provided with pet cock, making it a lift or a force Pump at will. Base and brace adjustable. Discharge fitted for ¾-inch hose. No. 2 Pump will go inside 3-inch well casing and No. 4 inside 3½-inch casing. Strainer supplied with each Pump.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

FIG. 1111. SIZES, PRICES, ETC.

No.	Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift and Force.	Cipher.	Brass Body Cylinder.
2	2½ x 16 in.	9½ in.	.21 gal.	1¼ in. pipe	100 ft.	Figbab	$17.00
4	3 x 16 "	9½ "	.30 "	1¼ "	60 "	Figbace	18.00

*Depth of Wells to which Pumps may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

"AURA" ANTI-FREEZING FORCE PUMP.

ADAPTED FOR "UNIVERSAL" BRONZE VALVE AND SEAT.

Fig. 1113 is a Double-Acting Pneumatic Force Pump, with brass cylinder and adjustable base and brace. Adapted to either shallow or deep wells. Deep-well arrangement is accomplished by lowering cylinder with pipe connected and lengthening plunger rod. Pump has large air chamber capacity, producing a strong, steady stream. Price includes both upper and lower cylinders. No. 2 Pump will go inside 4-inch well casing, and No. 4 inside 4½-inch casing. Discharge fitted for ¾-inch hose. Malleable strainer sent with each Pump.

Fig. 1229 (page 61), "Universal" Bronze Valve and Seat to order at extra price.

FIG. 1113. SIZES, PRICES, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke.	Suction.	*Lift and Force.	Cipher.	Brass Body Cylinder.
2	2½ x 10 in.	6 in.	.13 gal.	1¼ in. pipe	150 ft.	Figbil	$15.50
4	3 x 10 "	6 "	.18 "	1¼ "	75 "	Figbima	16.00

*Depth of Wells to which Pumps may be adapted by lowering Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

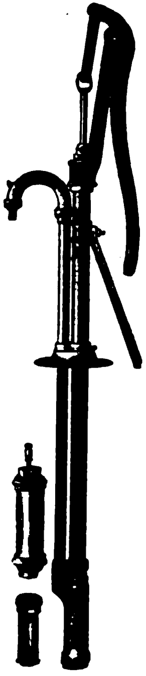


FIG. 1113

GOULDS DOUBLE-ACTING WELL FORCE PUMPS.

FOR SHALLOW OR DEEP WELLS.

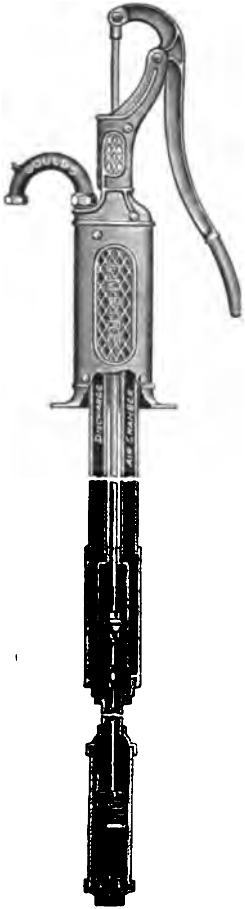


FIG. 1025

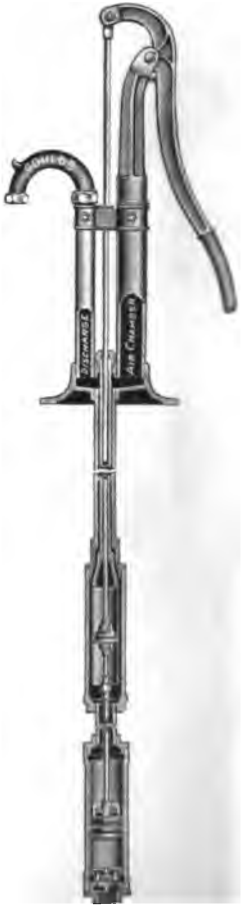


FIG. 1146

This line is fully illustrated and described on pages 25 to 29.

GOULDS "SENECA" DOUBLE-ACTING FORCE PUMPS.

FOR SHALLOW OR DEEP WELLS.

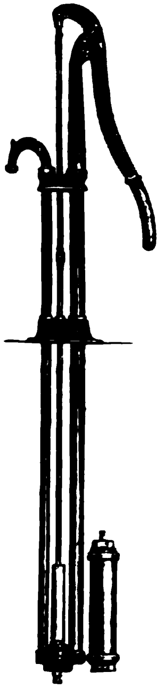


FIG. 1274

Fig. 1274, "Seneca" Double-Acting Force Pump, is adapted for shallow or deep wells. Wrought-iron pipe is used to form both set length and standard. Base is adjustable; spout revolving. Pumps work easily and deliver smooth, unbroken stream. The smooth discharge is effected by using 2-inch brass differential or force cylinder, which has one-half the displacement of the 3-inch brass suction cylinder furnished.

Brass differential cylinder can be replaced by a stuffing box or a plunger tube (as used in Figs. 1277 and 1278, page 51), when standard is wanted for use with tubular well cylinder or other sizes of cylinder.

Fig. 1275 is same as Fig. 1274, with wind mill top, arranged for 10-inch stroke mill and 5-inch stroke by hand.

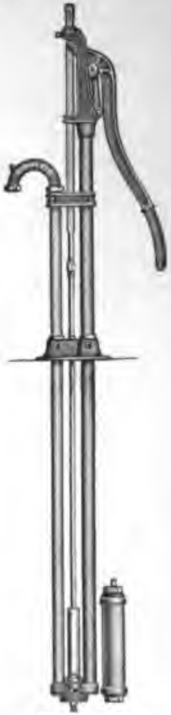


FIG. 1275

FIG. 1274. SIZE, PRICE, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Brass Body Cylinder.	
						Cipher.	Price.
4	3 x 10½ in.	5 in.	.15 gal.	1¼ in. pipe	¾ in. hose	Maltvo	$14.50

FIG. 1275. SIZE, PRICE, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke, 10 in.	Suction.	Discharge.	Brass Body Cylinder.	
						Cipher.	Price.
4	3 x 16 in.	5 in. hand. 10 " mill.	.31 gal.	1¼ in. pipe	¾ in. hose	Maltwe	$16.00

GOULDS "EMPIRE" DOUBLE-ACTING WELL FORCE PUMPS.

WITH "UNIVERSAL" BRONZE VALVE AND SEAT.

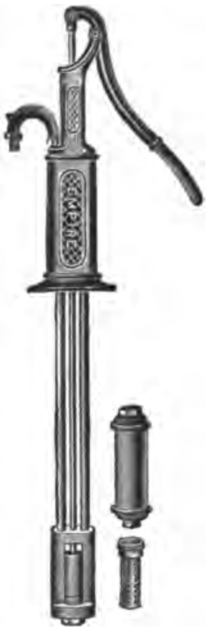


FIG. 1025

Fig. 1025 illustrates our "Empire" Double-Acting Well Force Pump, with Common Top. as adapted for shallow or deep wells. Pump consists of a standard, with bearer top in one piece, cast in two half sections, strongly bolted and holding securely in place the two supporting pipes which form respectively the air chamber and discharge pipes, connecting with upper cylinder. This upper cylinder is brass-lined and has differential plunger, contributing to an even and uniform discharge of water. We dispense with all stuffing boxes or glands, avoid all undue friction, and secure the easiest possible working Pump. Pump is furnished complete, with brass-lined or brass-body lower cylinder, with "Universal" Bronze Valve and Seat, and universal bushing for either shallow or deep wells. *No. 2 Pump will go inside 4-inch well casing; No. 4 Pump inside 5-inch well casing.*

Fig. 1026 is similar to Fig. 1025, but has wind mill top.

Unless otherwise ordered, we ship all "Empire" Pumps put up for shallow Wells. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach universal bushing to bottom of upper cylinder and top cap to lower cylinder, and connect with pipe and rod required for any depth of well.* Universal bushing, adapting Pumps for shallow or deep wells, strainer and hose connection go with each Pump and are included in prices given below.

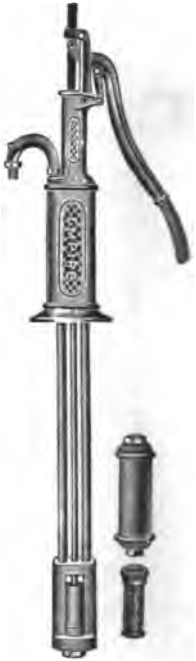


FIG. 1026

FIG. 1025. SIZES, PRICES, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	BRASS-LINED CYL.		BRASS BODY CYL.	
								Cipher.	Price.	Cipher.	Price.
2	2½ x 10½ in.	6 in.	.13 gals.	1¼ in. pipe	¾ in. hose	⅜ in.	100 ft.	Chestoc	$14.00	Chestpo	$15.00
4	3 x 10½ "	6 "	.18 "	1¼ "	¾ "	⅜ "	75 "	Chestabu	14.50	Chestil	15.50

FIG. 1026. SIZES, PRICES, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	BRASS-LINED CYL.		BRASS BODY CYL.	
								Cipher.	Price.	Cipher.	Price.
2	2½ x 10½ in.	6 in.	.13 gals.	1¼ in. pipe	¾ in. hose	⅜ in.	100 ft.	Chetja	$15.00	Chetjob	$16.00
4	3 x 10½ "	6 "	.18 "	1¼ "	¾ "	⅜ "	75 "	Chetkab	15.50	Chetiub	16.50

---

*Depth of Wells to which Pumps may be adapted by lowering Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS "EMPIRE" DOUBLE-ACTING WELL FORCE PUMPS.

WITH "UNIVERSAL" BRONZE VALVE AND SEAT.

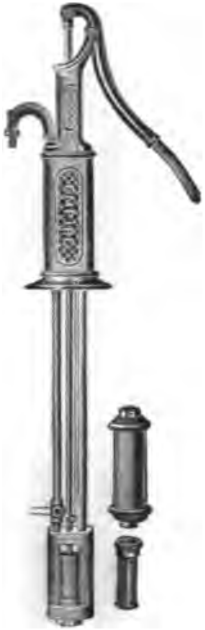


FIG. 1027

Fig. 1027 represents our "Empire" Double-Acting Well Force Pump, with Common Top, Brass Three-way Cock and Connecting Rod, for shallow or deep wells. Details of construction and adaptations will be found on page 24. The addition of Three-Way Cock and Connecting Rod for distributing water to any part of premises, house, barns, etc., will increase the usefulness of this Pump for many purposes.

Fig. 1028 is similar to Fig. 1027, but has Wind Mill Top.

Unless otherwise ordered, we ship all "Empire" Pumps put up for shallow wells; that is, with lower working cylinder screwed into upper cylinder and the universal bushing for bottom of upper cylinder and top attachment for lower cylinder tied on. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach universal bushing to bottom of upper cylinder and top cap to lower cylinder, and connect with pipe and rod required for any depth of well.* Universal bushing, adapting Pumps for shallow or deep wells, strainer and hose connection go with each Pump and are included in prices given below.

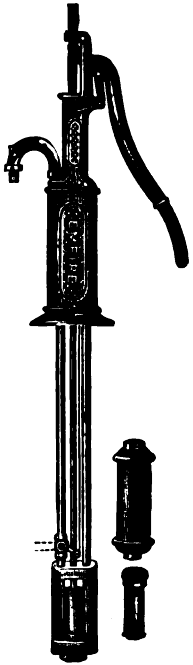


FIG. 1028

FIG. 1027. SIZES, PRICES, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lower Discharge.	Upper Discharge.	*Lift and Force.	Brass-Lined Cylinder.		Brass Body Cylinder.	
								Cipher.	Price.	Cipher.	Price.
2	2½ x 10½ in.	6 in.	.13 gal.	1¼ in. pipe	1 in. pipe	¾ in. hose	100 ft.	Chetman	$16.50	Chetnel	$17.50
4	3 x 10½ "	6 "	.18 "	1¼ "	1 "	¾ "	75 "	Chetnob	17.00	Chetelu	18.00

FIG. 1028. SIZES, PRICES, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lower Discharge.	Upper Discharge.	*Lift and Force.	Brass-Lined Cylinder.		Brass Body Cylinder.	
								Cipher.	Price.	Cipher.	Price.
2	2½ x 10½ in.	6 in.	.13 gal.	1¼ in. pipe	1 in. pipe	¾ in. hose	100 ft.	Chetpat	$17.50	Chetqub	$18.50
4	3 x 10½ "	6 "	.18 "	1¼ "	1 "	¾ "	75 "	Chetrai	18.00	Cheuact	19.00

* Depth of Wells to which Pumps may be adapted by lowering Cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS "ADVANCE" DOUBLE-ACTING FORCE PUMPS.

WITH ' UNIVERSAL" BRONZE VALVE AND SEAT.

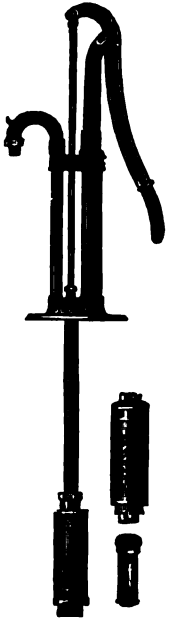


FIG. 1146

Fig. 1146, " Advance" Double-Acting Well Force Pump, has common top for hand power, adapted for shallow or deep wells—open, driven, drilled or cased. It is constructed with seamless brass differential cylinder and brass-lined or brass body lower cylinder, having inside attachments and "Universal" Bronze Valve and Seat.

Fig. 1147 is of same construction as Fig. 1146, with change of top for 10-inch stroke wind mill or 6-inch stroke by hand.

No. 2 Pumps, with brass body cylinder, will go inside of 3-inch well casing, and with brass-lined cylinder inside 3¼-inch casing.

No. 4 Pumps, with brass body cylinder, will go inside of 3½-inch well casing, and with brass-lined cylinder inside 3¾-inch casing.

Unless otherwise ordered, we ship all "Advance" Pumps put up for shallow wells; that is, with lower working cylinder screwed into upper cylinder and the top attachment for lower cylinder tied on. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach top cap to lower cylinder, and connect with pipe and rod for any depth of well.* Top cap, hose connection and strainer go with each Pump. and are included in price given below.

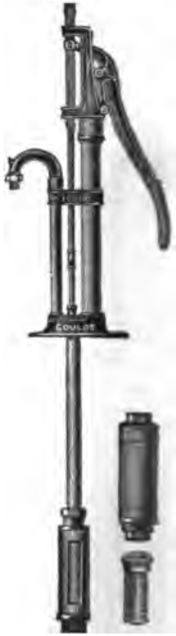


FIG. 1147

FIG. 1146. SIZES, PRICES, ETC.

No.	Lower Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Brass-Lined Cylinder.		Brass Body Cylinder.	
						Cipher.	Price.	Cipher.	Price.
2	2½ x 10½ in.	5 in.	.11 gal.	1¼ in. pipe	¾ in. hose	Flendub	$14.50	Hareta	$15.50
4	3 x 10½ "	5 "	.15 "	1¼ "	¾ "	Flepal	15.00	Hareula	16.00
6	3½ x 10½ "	5 "	.21 "	1½ "	1 "	Knufig	18.00	Knufut	19.50
8	4 x 10½ "	5 "	.27 "	2 "	1 "	Knufol	20.00	Lamebs	22.00

FIG. 1147. SIZES, PRICES, ETC.

No.	Lower Cyl.	Stroke.	Capacity per Stroke. 10 inch.	Suction.	Discharge.	Brass-Lined Cylinder.		Brass Body Cylinder.	
						Cipher.	Price.	Cipher.	Price.
2	2½ x 16 in.	6 in. hand and 10 in. mill	.21 gal.	1¼ in. pipe	¾ in. hose	Mostub	$16.00	Mostve	$17.00
4	3 x 16 "		.31 "	1¼ "	¾ "	Mostwo	16.50	Mostxu	17.50
6	3½ x 16 "		.42 "	1½ "	1 "	Lameck	20.00	Lameta	21.50
8	4 x 16 "		.54 "	2 "	1 "	Lameda	22.00	Lamegu	24.00

GOULDS DOUBLE-ACTING WELL FORCE PUMPS.

WITH "UNIVERSAL" BRONZE VALVE AND SEAT.

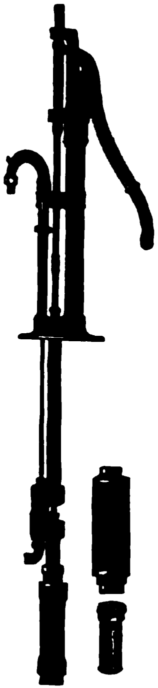


FIG. 1148

Fig. 1148 represents our "**Advance**" Double-Acting Force Pump, with Wind Mill Top and Three-Way Distributing Valve, by which water may be distributed about the premises. When operated by hand, Pump has 6-inch stroke, and when wind mill is used the stroke is 10-inch. Lower cylinder is either brass or brass-lined, with "Universal" Bronze Valve and Seat.

Unless otherwise ordered, we ship all "Advance" Pumps put up for shallow wells; that is, with lower working cylinder screwed into upper cylinder and the top attachment for lower cylinder tied on. *Where wanted for deep wells, unscrew lower cylinder from upper cylinder and attach top cap to lower cylinder, and connect with pipe and rod for any depth of well.* Top cap, hose connection and strainer go with each Pump, and are included in price given below.

Fig. 1276, "**Seneca**" Double-Acting Pump, has Wind Mill Top and Three-Way Distributing Valve. Pump has 10-inch stroke by mill and 5-inch stroke by hand. Spout is revolving. Base adjustable. We ship Pump with lower cylinder detached.

An even flow of water is obtained by using differential cylinder of one-half the area of lower cylinder. Other sizes of lower cylinder can be used by replacing the differential cylinder with an attachment having either stuffing box or plunger tube. A 2-inch Tubular Well Plunger can be drawn through the working-head. Strainer and hose connection included with each Pump.

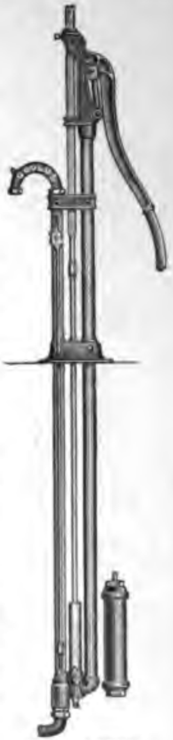


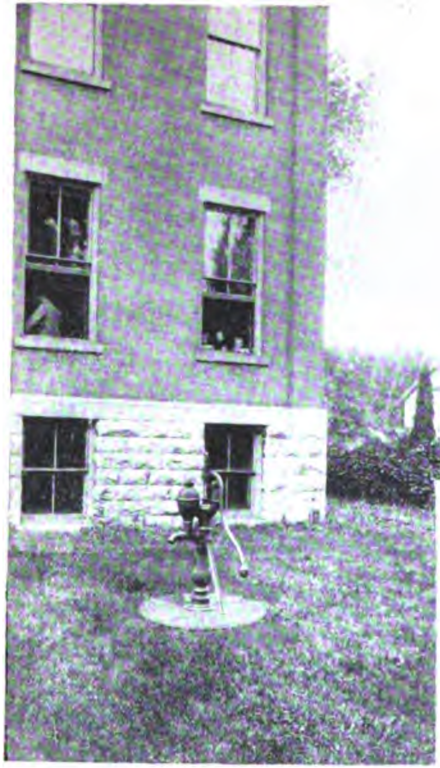
FIG. 1276

FIG. 1148. SIZES, PRICES, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke, 10 inch.	Suction.	Lower Discharge.	Upper Discharge.	Brass-Lined Cylinder.		Brass Body Cylinder.	
							Cipher.	Price.	Cipher.	Price.
2	2½ x 16 in.	6 in. hand,	.21 gal.	1¼ in. pipe	1 in. pipe	¾ in. hose	Motab	$19.50	Motem	$20.50
4	3 x 16 "	10 in. mill,	.31 "	1¼ "	1 "	¾ "	Motenu	20.00	Moteux	21.00

FIG. 1276. SIZES, PRICES, ETC.

No.	Lower Cylinder.	Stroke.	Capacity per Stroke, 10 inch.	Suction.	Discharge.	Brass Body Cylinder.	
						Cipher.	Price.
6	3 x 16 in.	6 in. hand, 10 in. mill,	.31 gals.	1¼ or 2 in. pipe	¾ in. hose	Lameho	$20.00

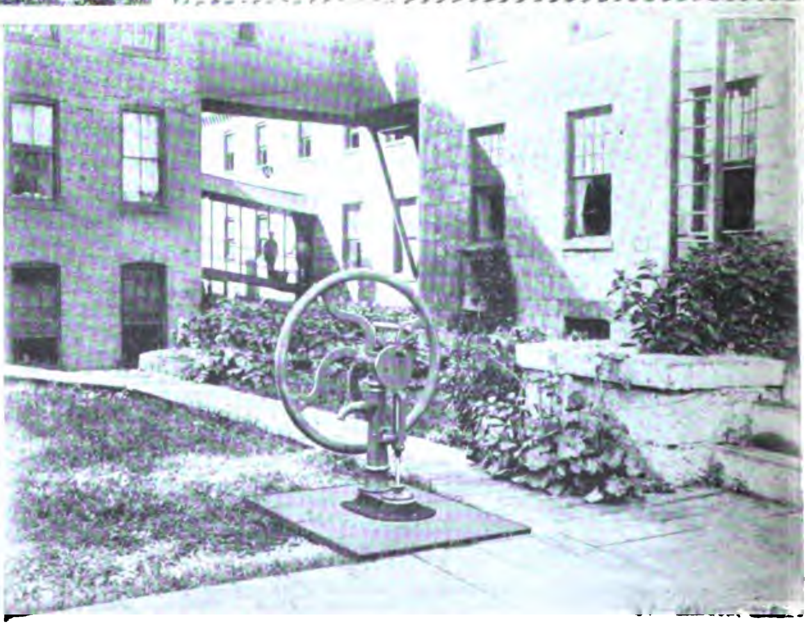


Deep Well Pump Standards and Cylinders

have an almost universal application where water supply is derived from open, driven or drilled and cased deep wells.

The open, or dug and curbed well is, perhaps, the most common and usually made where water channels are not more than 50 feet below surface of ground.

Drilled and cased wells are generally made where rock is encountered and the water is considerable distance below ground. The general plan is to line the well with casing down to the rock. In this manner a practically closed well is secured, free from drainage or pollution from any source



We show Fig. 237, Force Pump Standard (page 38), operating Fig. 1230, Deep Well Cylinder (page 62). Also Fig. 547, Manual Pumping Apparatus (page 100), operating Fig. 1231, Deep Well Pump Cylinder (page 62).

This class of Pump Standards will be found on pages 31 to 39 and **pages 99 to 101, and Pump Cylinders, pages 62 to 65.**

GOULDS "STAR" WELL LIFT PUMP STANDARDS.

WITH REVOLVING OPEN TOP AND SOLID BASE.

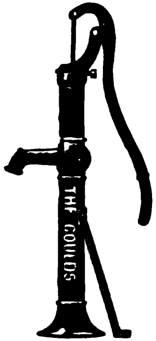


FIG. 1023

Light.

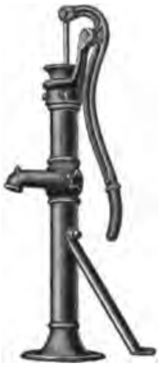


FIG. 846, NO. 3

Medium.

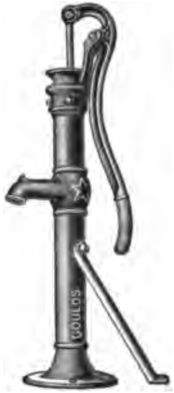


FIG. 846, NO. 4

Heavy.

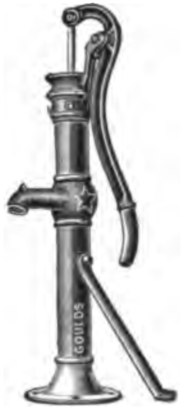


FIG. 846, NO. 5

Extra Heavy.

Fig. 1023 represents our Light Well Lift Pump Standard, adapted for shallow wells—dug, drilled or driven. It has revolving bearer top, with recess for priming, if necessary.

Fig. 846 represents our "Star" Well Pump Standard, fitted with revolving bowl top and solid base. This style is a great favorite with well drillers. We offer in three sizes and weights.

SIZES AND PRICES.

	No.	Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
Fig. 1023	3	6 in.	1¼ in. pipe	⅝ in.	2½ in. cylinder, 40 ft. 3 " 30 "	Desedab	$4.50
Fig. 846	3	6 in.	1¼ in. pipe	⅝ in.	2¾ in. cylinder, 40 ft.	Wallew	$5.00
Fig. 846	4	6 "	1¼ "	⅝ "	3 " 40 "	Wallpie	5.50
Fig. 846	5	6 "	1¼ "	⅝ "	3½ " 40 "	Wallroc	6.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionably deeper wells.

GOULDS "STAR" WELL LIFT PUMP STANDARDS.

WITH REVOLVING TIGHT TOP AND SOLID BASE.

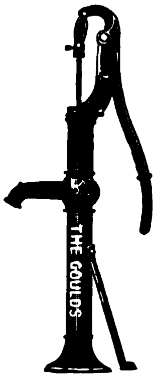


FIG. 1024

Light.

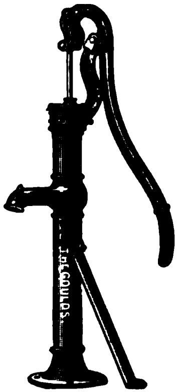


FIG. 850, NO. 3

Medium.

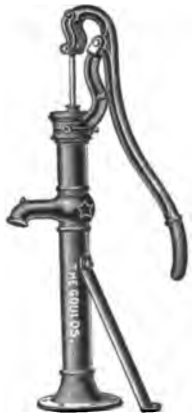


FIG. 850, NO. 4

Heavy.

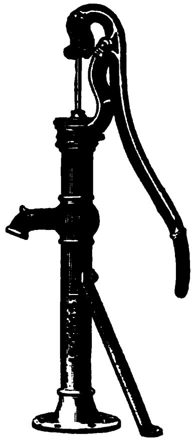


FIG. 850, NO. 5

Extra Heavy.

Figs. 1024 and 850 represent our Well Pump Standards fitted with revolving tight top, polished rod and links above, and solid base. These Pumps are especially desirable for public places, for the tight top precludes the possibility of stones or sticks being thrown into Pump

Always tapped near the spout for sizes of wrought-iron pipe given below, although we can fit for 1½ or 2-inch, if so ordered.

FIG. 1024. SIZE, PRICE, ETC.

No.	Stroke.	Suction,	Well Rod.	*Lift.	Cipher.	Price.
3	6 in.	1¼ in. pipe	⅜ in.	2½ in. Cylinder, 40 ft. 3 " 30 "	Dosedac	$5.25

FIG. 850. SIZES, PRICES, ETC.

No.	Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
3	6 in.	1¼ in. pipe	⅜ in.	2½ in. Cylinder, 40 ft.	Walirut	$5.75
4	6 "	1¼ "	⅜ "	3 " 40 "	Walrvu	6.25
5	6 "	1¼ "	⅜ "	3½ " 40 "	Walt	6.75

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

GOULDS WELL LIFT PUMP STANDARD.

WITH SOLID BEARER AND BASE.

Fig. 486 represents our Well Lift Pump Standard for deep or shallow wells. The very strong bearer top and long and heavy lever adapt this Standard for wells of more than ordinary depth, and it is sometimes used over very deep wells. The Standard is tapped for wrought-iron pipe near the spout. We can fit for 1½ or 2-inch pipe, if so ordered, but always fit for 1¼ inch unless otherwise directed.

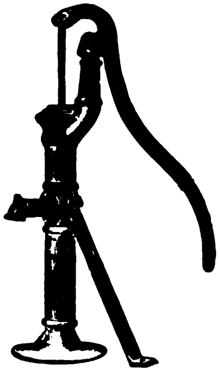


FIG. 486

FIG. 486. SIZE, PRICE, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
8 in.	1¼ in. pipe.	7-16 in.	2½ in. Cylinder, 75 ft. 3 " " 50 " 4 " " 30 "	Harm	$6.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

WELL LIFT PUMP STANDARD AND CYLINDER.

FOR DEEP OR SHALLOW WELLS.

We have dropped Fig. 559, under which we formerly listed a combination of Pump Standard and Cylinder, and show herewith

Fig. 845, "Star" Lift Pump Standard, with removable bolt base; convenient for making pipe and rod connections. Connecting pipe screws into base.

Cylinder shown on pages 62 to 66 can be used with this standard.

Fig. 559½ is iron Cylinder surmounted with air chamber, which arrangement relieves the jerk and strain and affords uniform discharge. We offer only two sizes and advise their use with the size standards opposite them in the table below. Other sizes will be found under same Fig., page 66.

FIGS. 845 AND 559½. SIZES, PRICES, ETC.

No.	Stroke.	Suction.	Well Rod.	Lift.	Fig. 845, Pump Standard.		Fig. 559½. Iron Cylinder.		
					Cipher.	Price.	Size.	Cipher.	Price.
1	6 in.	1 in. pipe	⅜ in.	2¼ in. Cyl., 40 ft.	Walker	$4.25			
2	6 "	1¼ "	⅝ "	2½ " " 40 "	Walkin	4.75			
3	6 "	1¼ "	⅝ "	2¾ " " 40 "	Wally	5.00			
4	6 "	1¼ "	⅝ "	3 " " 30 "	Waller	5.50	3 x 12 in.	Lawn	$9.00
5	6 "	1¼ "	⅝ "	3¼ " " 30 "	Wallfo	5.75			
6	6 "	2 "	½ "	4 " " 45 "	Raptwif	8.00	4 x 12 "	Laxd	11.50

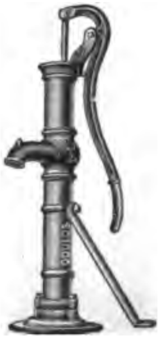


FIG. 845

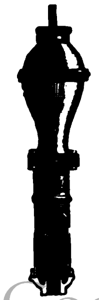


FIG. 559½

GOULDS DEEP WELL LIFT PUMP STANDARD.

WITH TIGHT TOP GUIDE.

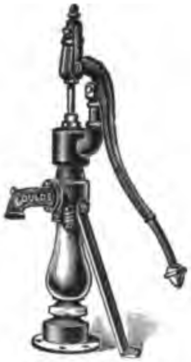


FIG. 236

☞ Fig. 236 represents our Heavy Deep Well Lift Pump Standard, with tight top, for wells up to 100 feet deep. The Standard is bolted together near the spout with an intermediate flange, which will be found a great convenience in making pipe and rod connections. Fig. 236 has been a great favorite with the Trade for years. It is built for every-day indiscriminate use. Any size pipe from 1¼-inch to 2-inch can be used with this Standard, but always fitted for 1¼-inch unless otherwise ordered.

FIG. 236. SIZE, PRICE, ETC.

Stroke.	Suction.	Well Rod,	*Lift.	Cipher.	Price.
6 in.	1¼ in. pipe	7-16 in.	2½ in. cyl., 100 ft. 3 " " 60 "	Cane	$10.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

* Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

GOULDS DEEP WELL LIFT PUMP STANDARD.

WITH TIGHT TOP GUIDE.

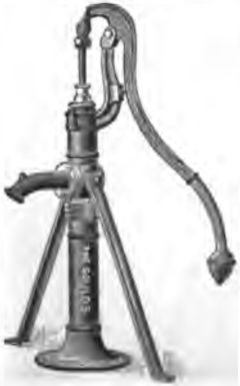


FIG. 592

The cut accurately represents our Heavy Deep Well Lift Pump Standard. The manner of construction in two sections, with flange between, is plainly visible, and will be esteemed a very great convenience by those who have to set up these Pumps. It is very strong and heavy, has balanced handle, and will answer to use on wells from 100 to 200 feet deep.

Any size from 1¼-inch to 2½-inch pipe can be used with this Standard, but always fitted as below unless ordered otherwise.

FIG. 592. SIZE, PRICE, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
6 in.	1½ in. pipe	7-16 in.	2½ in. cyl., 150 ft. 3 " " 100 "	Milled	$16.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water (smaller Cylinders in proportionately deeper wells

GOULDS "STAR" WELL FORCE PUMP STANDARDS.

WITH REVOLVING TOP AND SOLID BASE.

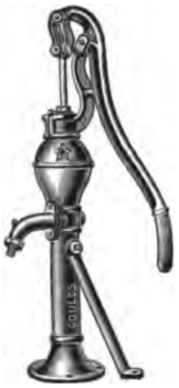


FIG. 853, NO. 0

Light.

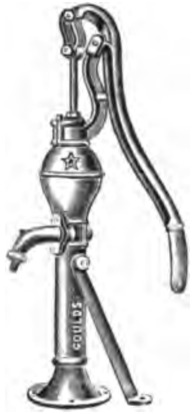


FIG. 853, NO. 1

Medium.

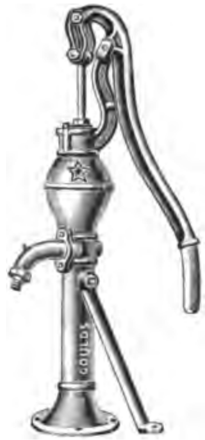


FIG. 853, NO. 2

Heavy.

Fig. 853 represents our admirable "Star" Well Force Pump Standard arranged with tight top, polished rod and links above. In this Standard the air chamber is made by enlarging stock at the top.

All these Standards are tapped for pipe near the spout. Each one has an outlet back of the spout for attaching pipe, and the spout is provided with hose tube and nut to screw on, and not with a clap-trap of a clamp.

Always tapped as below, unless otherwise ordered.

FIG. 853. SIZES, PRICES, ETC.

No.	Stroke.	Suction.	Discharges.	Well Rod.	*Lift and Force.	Cipher.	Price.
0	6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	2½ in. cyl., 60 ft.	Broadgauge	$8.50
1	6 "	1¼ "	1¼ " " ¾ "	7-16 "	2¾ " 50 "	Washa	9.00
2	6 "	1¼ "	1¼ " " ¾ "	7-16 "	3 " 40 "	Washabi	10.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS "STAR" WELL FORCE PUMP STANDARDS.

WITH REVOLVING TOP AND COCK SPOUT.

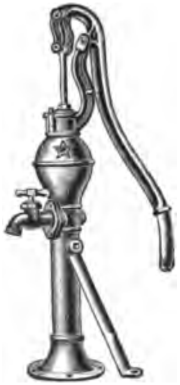


FIG. 883, NO. 0

Light.

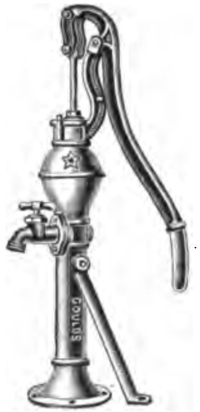


FIG. 883, NO. 1

Medium.

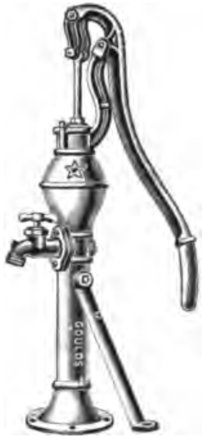


FIG. 883, NO. 2

Heavy.

This is the same Force Pump Standard in all respects as our Fig. 853, more fully described on preceding page, except that it has a cock spout. When pipe is connected to the opening behind the spout, there must be some means for closing the spout opening, and a cock does this. Thus one Pump may be made to supply water at the house, or any part of the premises as well.

The Standards are always tapped for pipe near the spout, as below, unless otherwise ordered.

FIG. 883. SIZES, PRICES, ETC.

No.	Stroke.	Suction.	Discharges.	Well Rod.	*Lift and Force.	Cipher.	Price.
0	6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	2½ in. cyl., 60 ft.	Lamfag	$11.00
1	6 "	1¼ "	1¼ " " ¾ "	7-16 "	2¾ " 50 "	Washbal	11.50
2	6 "	1¼ "	1¼ " " ¾ "	7-16 "	3 " 40 "	Washbow	12.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard, and *cost extra*.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

"NORTHERN STAR" WELL FORCE PUMP STANDARD.

WITH REVOLVING TOP AND SOLID BASE.

Fig. 855 represents our "Northern Star" Force Pump Standard, with air chamber on spout, tight top and polished rod and links above. It is simple in construction, strong and compact, and offers good value for a Pump of this class at the low price at which we are able to sell it.

It is tapped near the spout for sizes of wrought-iron pipe given in our table below, although it could be changed, if desired. Cock spouts furnished at $2 50 extra list.

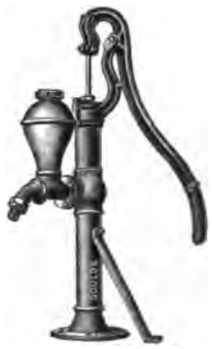


FIG. 855

FIG. 855. SIZE, PRICE, ETC

Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	2½ in. cyl., 60 ft. 3 " 45 "	Washe	$11.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

GOULDS "STAR" WELL FORCE PUMP STANDARD.

WITH REVOLVING TOP. SOLID BASE.

Fig. 858 is similar in appearance and construction to Fig. 855, given above, except the standard is built in two sections, with intermediate flange between, into which the suction pipe is screwed. This flange is interchangeable and can be screwed for any size of pipe up to and including 2½-inch, but always shipped as below unless otherwise ordered. Cock spout furnished at $2.50 extra list.

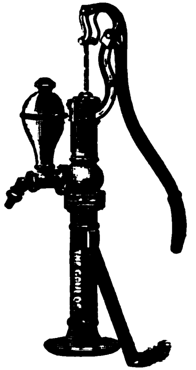


FIG. 858

FIG. 858. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	2½ in. cyl., 100 ft. 3 " 60 "	Washoff	$12.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

GOULDS DEEP-WELL FORCE PUMP STANDARD.

WITH AIR CHAMBER ON SPOUT.

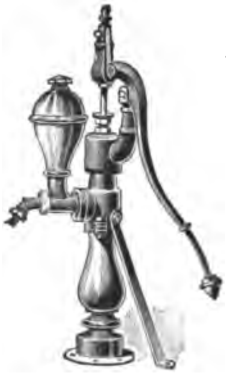


FIG. 237

Fig. 237 represents our Deep-Well Force Pump Standard, with sectional construction, etc., and the addition of an air chamber on the spout. There is a half-hose coupling and tube for attaching hose on the spout.

Always fitted for 1¼-inch pipe, unless ordered to the contrary, but we can fit them for 1½ or 2-inch pipe when desired.

FIG. 237. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and 1 in. hose	7-16 in.	2 in. cyl., 150 ft. 2½ " 100 " 3 " 60 "	Cannon	$13.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of the water, or total lift and force from supply to point of delivery.

GOULDS DEEP-WELL FORCE PUMP STANDARD.

WITH AIR CHAMBER AND COCK SPOUT.

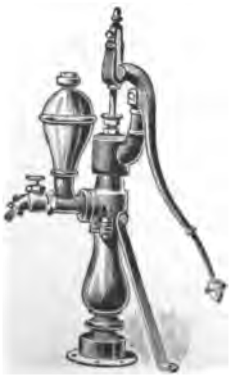


FIG. 887

Fig. 887 represents our Fig. 237, Deep-Well Force Pump Standard, described above, arranged with cock spout on air chamber; closing this cock allows discharge to pass through top of air chamber. A hose coupling is screwed on end of cock for attaching hose.

Always fitted for 1¼-inch pipe, unless ordered to the contrary, but we can fit them for 1½ or 2-inch pipe when so desired.

FIG. 887. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and 1 in. hose	7-16 in.	2 in. cyl., 150 ft. 2½ " 100 " 3 " 60 "	Cape	$15.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS DEEP-WELL FORCE PUMP STANDARD.

WITH AIR CHAMBER ON SPOUT.

The cut represents our Heavy Deep-Well Force Pump Standard. It has sectional standard, tight top with polished rod and links above, heavy balanced lever and two supporting braces, adapting it for hard duty. Always fitted for 1½-inch pipe unless otherwise ordered, but we can fit them for pipe up to 2½-inches. Table gives complete data.

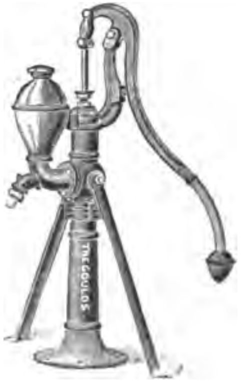


FIG. 593.

FIG. 593. SIZES, PRICES, ETC.

No.	Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
1	6 in.	1½ in. pipe	1½ in. pipe and 1 in. hose	7-16 in.	2 in. Cyl., 225 ft. 2½ " 150 " 3 " 100 "	Milt	$20.00
2	Same as No. 1 with cock spout.			7-16 "		Milton	22.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

---

* Depth of Wells of which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS DEEP-WELL FORCE PUMP STANDARD.

WITH BRAKE TOP AND WOOD LEVERS.

The cut represents our Heavy Deep-Well Force Pump Standard, arranged with brake top, so that either one or two men can operate Pump. Intermediate flange below spout is of considerable convenience in making pipe connections. Standard has two supporting braces. Always fitted for 1½-inch pipe unless otherwise ordered, but we can fit them for pipe up to 2½ inches.

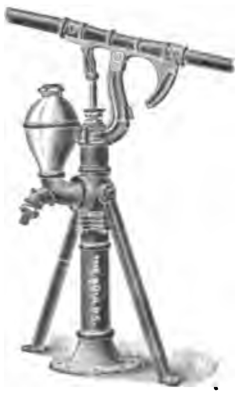


FIG. 763

FIG. 763. SIZES, PRICES, ETC.

No.	Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
1	6 in.	1½ in. pipe	1½ in. pipe and 1 in. hose	7-16 in.	2 in. Cyl., 225 ft. 2½ " 150 " 3 " 100 "	Waterag	$21.00
2	Same as above with cock spout.			7-16 "		Waterbu	23.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

---

* Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Wind Mill Pumps.

Probably no greater labor-saving and useful device has ever been invented than the Wind Mill, and perhaps their greatest usefulness is for pumping water.

Our illustration shows, to the right, Fig. 762, Lift Pump Standard, operating Fig. 1231, Pump Cylinder, in drilled and cased well. Pump Standard will be found on page 42; Cylinder, pages 62 and 63.

To the left we show Fig. 423, Force Pump Standard (page 47), operating

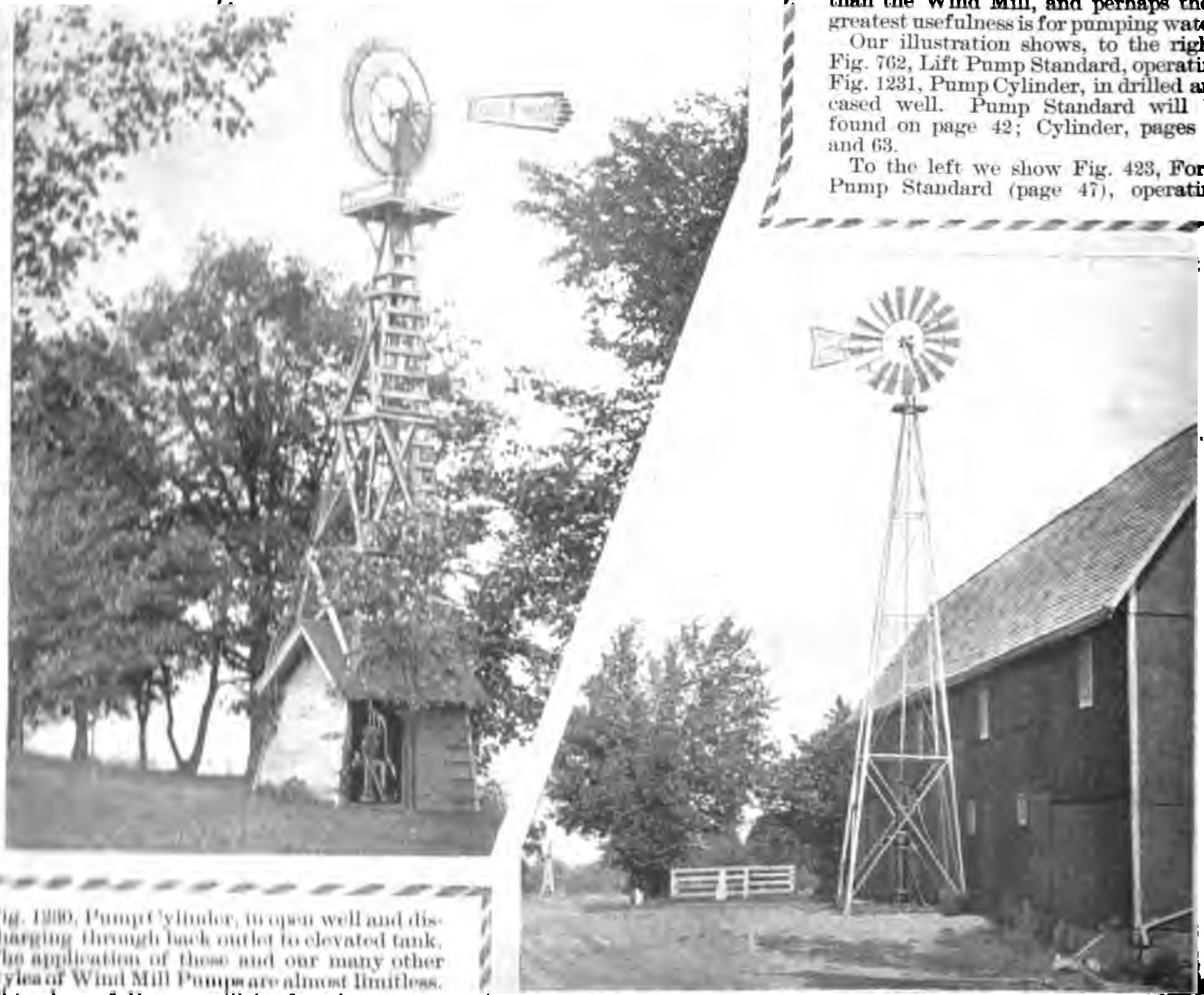


Fig. 1230, Pump Cylinder, in open well and discharging through back outlet to elevated tank. The application of these and our many other styles of Wind Mill Pumps are almost limitless. This class of Pumps will be found on pages 42 to 46.

PUMPING CAPACITY OF WIND MILLS.

SIZE OF CYLINDER TO USE.

Below we give table designed to aid in the selection of suitable size Wind Mill and Cylinder or Pump to perform a required amount of pumping. Selection should be determined by the quantity of water desired per hour, the height or pressure against which it must be pumped, and the velocity of the wind.

Figures in table below are based upon 10-mile wind, which is not far from the mean average velocity for the United States. The power of the wind is as the square of its velocity. To figure on a 12-mile wind, increase one-third the number of gallons given in table below, and select Cylinder having one-third greater *area* than given in table. (Areas of Cylinders of different diameters are given on page 318.)

To figure on 15-mile wind, double the number of gallons and *area* of Cylinder.

ELEVATION.	8-FT. DIRECT STROKE MILL OR 6-FT. MILL GEARED BACK 4⅓ TO 1.			10-FT. DIRECT STROKE MILL OR 8-FT. MILL GEARED BACK 2¾ TO 1.		
Total from Water Level to Point of Delivery.	Approximate No. Gals. per Hour Mill will Pump.	Size Single-Acting Pump or Cylinder to Use. With 4-in. Stroke.	Size Single-Acting Pump or Cylinder to Use. With 7-in. Stroke.	Approximate No. Gals. per Hour Mill will Pump.	Size Single-Acting Pump or Cylinder to Use. With 5-in. Stroke.	Size Single-Acting Pump or Cylinder to Use. With 8-in. Stroke.
10 ft.	560	4 or 4¼ in. cyl.	2¾ or 3 in. cyl.	1,100	5¾ or 6 in. cyl.	4½ or 4¾ in. cyl.
20 “	300	2¾ “ 3 “	2¼ “ 2½ “	710	4¼ “ 4½ “	3½ “ 3¾ “
30 “	210	2½ “ 2¾ “	2 “	475	3¾ “ 4 “	2¾ “ 3 “
40 “	175	2½ “	1¾ “	380	3¼ “ 3½ “	2½ “ 2¾ “
50 “	140	2¼ “	1½ “ 1¾ “	300	2¾ “ 3 “	2¼ “ 2½ “
75 “	85	1¾ “		275	2¾ “	2 “ 2¼ “
100 “	70	1½ “		190	2½ “ 2¾ “	2 “
125 “				150	2¼ “	1¾ “
150 “				125	2 “	1½ “
175 “				100	1¾ “	1⅜ “
200 “				75	1½ “	

ELEVATION.	12-FT. DIRECT STROKE MILL OR 10-FT. MILL GEARED BACK 2¼ TO 1.			18-FT. DIRECT STROKE MILL (13-FT. MILL GEARED BACK 2½ TO 1 HAS ABOUT ⅝ AS MUCH PUMPING CAPACITY.)		
Total from Water Level to Point of Delivery.	Approximate No. Gals. per Hour Mill will Pump.	Size Single-Acting Pump or Cylinder to Use. With 8-in. Stroke.	Size Single-Acting Pump or Cylinder to Use. With 10-in. Stroke.	Approximate No. Gals. per Hour Mill will Pump.	Size Single-Acting Pump or Cylinder to Use. With 10-in. Stroke.	Size Single-Acting Pump or Cylinder to Use. With 12-in. Stroke.
10 ft.				7,200	10 in. cyl.	9½ or 10 in. cyl.
20 “	1,440	5 or 5¼ in. cyl.	4½ or 4¾ in. cyl.	3,600	7¾ “	7 “
30 “	960	4¼ “ 4½ “	3¾ “ 4 “	2,400	6¼ “	5¾ “
40 “	720	3½ “ 3¾ “	3¼ “	1,800	5¼ or 5½ in. cyl.	4¾ “ 5 “
50 “	575	3¼ “ 3½ “	2¾ “ 3 “	1,500	4¾ “ 5 “	4½ “
75 “	385	2¾ “	2¼ “ 2½ “	960	3¾ “ 4 “	3½ “ 3¾ “
100 “	290	2¼ “ 2½ “	2 “ 2¼ “	720	3¾ “	3¼ “
125 “	230	2 “	1¾ “	575	3 “ 3¼ “	2¾ “
150 “	190	2 “	1¾ “	480	2¾ “	2½ “
175 “	160	1¾ “	1½ “	400	2½ “	2¼ “
200 “	140	1½ “		360	2¼ “ 2½ “	2 “ 2¼ “
250 “				300	2¼ “	2 “

GOULDS "STAR" WELL LIFT PUMP STANDARDS.

WITH REVOLVING TOP FOR WIND MILL AND HAND.

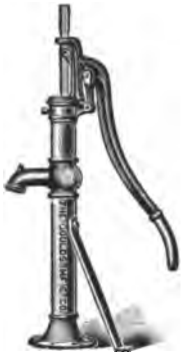

THE GOULDS MFG. CO.

FIG. 1032, NO. 3
Light.

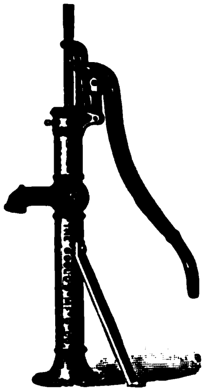


FIG. 762, NO. 3
Medium.

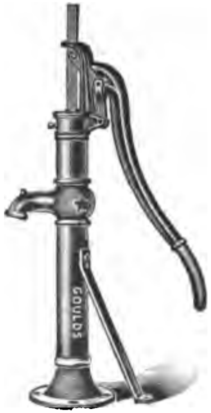


FIG. 762, NO. 4
Heavy.

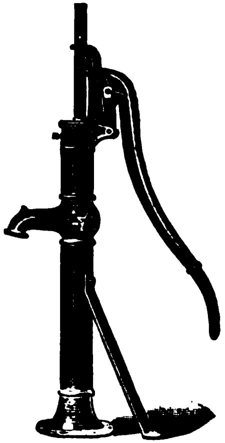


FIG. 762, NO. 5
Extra Heavy.

Our new line of Well Pump Standards with Wind Mill Tops, as shown above, contain all the advantages suggested by the most recent practice, and will be found to be the best of the kind made by any manufacturer. They are tapped for pipe near the spout, have supporting brace, and are a most suitable Standard every way. We can fit the 6-inch or 10-inch stroke Pumps for 1¼, 1½ or 2-inch pipe (No. 5 Standard can be tapped 2½ inch), but always fit as below, unless otherwise directed. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. We do not send wind mill slides, except when specially ordered.

FIG. 1032. SIZES, PRICES, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
6 in.	1¼ in. pipe	7-16 in.	2½ in. cyl., 40 ft.	Dreaded	$6.50
10 "	2 "	7-16 in. and 1 in.	3 " 30 "	Dreadic	7.50

FIG. 762. SIZES, PRICES, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	No. 8.		No. 4.		No. 5.	
				Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
6 in.	1¼ in. pipe	7-16 in.	2½ in. cyl., 100 ft.	Vauntfr	$7.00	Vauntful	$7.50	Vauntin	$8.00
10 "	2 "	7-16 and 1 in.	3 " 60 "	Raweck	8.00	Veader	8.50	Veal	9.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra*.

*Depth of Wells to which Pump Standards may be adapted by placing Cylinders within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.

GOULDS WELL LIFT PUMP STANDARD.

WITH SWELL TOP AND SOLID BASE.

Fig. 1055 represents our Wind Mill Lift Pump Standard with swell top, adapted to drilled or tubular wells. The peculiar advantage of this formation of top is that it prevents the water from splashing out, as is sometimes the case when pumping very fast with other standards. Standard is provided with revolving bearer and has guided rod. Tapped near the spout for wrought-iron connecting pipe, which may be 1¼, 1½ or 2-inch, but always 1¼-inch unless otherwise ordered. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. Wind mill slides are not furnished unless specially ordered.

FIG. 1055. SIZES, PRICES, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
6 in.	1¼ in. pipe	7-16 in.	2½ in. cyl., 100 ft.	**Figast**	$7.50
10 "	2 "	7-16 "	3 " 60 "	**Figaub**	8.50

Cylinders like Fig. 1230 and 1231, pages 62 and 63, are required with this Pump Standard, and ***cost extra.***

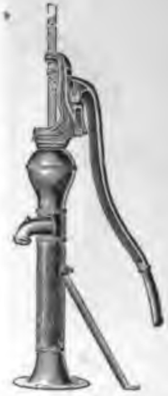


FIG. 1055

***Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.**

GOULDS WELL LIFT PUMP TOP AND BASE.

FOR TUBULAR WELLS

Fig. 1056 represents a Wind Mill Lift Pump Top and Base, adapted for tubular wells, or where cylinder is formed inside wrought-iron pipe. The stock is formed principally by the tubular well pipe, which is connected immediately under the spout. This pipe may be 2, 2½ or 3 inches in diameter, but we invariably fit standard for 2-inch pipe unless otherwise ordered. The base may be attached to pipe at any desired point, and thus the standard may be raised and lowered to suit convenience. Pumps have coupling for 1-inch wood rod.

FIG. 1056. SIZES, PRICES, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
6 in.	2 in. pipe	7-16 and 1 in.	1½ in. cyl., 150 ft.	**Figate**	$6.50
10 "	2 "	7-16 " 1 "	2 " 100 "	**Figava**	7.50

For Tubular Well Cylinder for use with above, see Fig. 142, page 74.

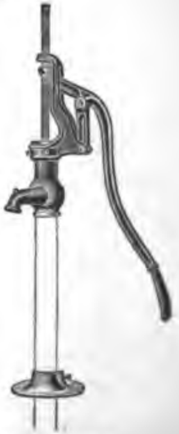


FIG. 1056

***Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller Cylinders in proportionately deeper wells.**

GOULDS "STAR" WELL LIFT PUMP STANDARD.

WITH REVOLVING TOP. FOR HAND OR WIND MILL.

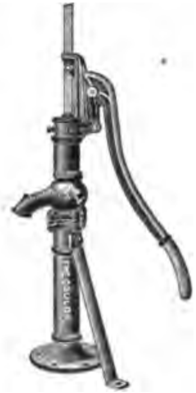


FIG. 412

Fig. 412, Wind Mill Pump Standard, may be used over wells up to 150 feet deep. The Standard is in two sections, bolted together just below the spout. Between the two sections is interposed a flange into which the connecting pipe is screwed. These flanges are all of a size and drilled exactly alike, so that they will interchange and can be cut for either 1¼, 1½, 2 or 2½-inch wrought-iron pipe. Always fitted as below unless otherwise directed. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. We do not send wind mill slides unless specially ordered.

FIG. 412. SIZES, PRICES, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
6 in.	1¼ in. pipe	7-16 in.	2½ in. cyl., 100 ft.	Lain	$10.00
10 "	2 "	7-16 and 1 in.	3 " 60 "	Laird	11.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water; smaller cylinders in proportionately deeper wells.

GOULDS "STAR" WELL LIFT PUMP STANDARD.

ADJUSTABLE STROKE.

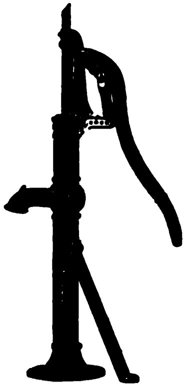


FIG. 780

Fig. 780 represents our Adjustable Stroke Pump Standard with Wind Mill top, and is particularly adapted to all kinds of drilled or tubular wells, and those in which working barrels are formed inside of 2-inch pipe.

This Pump can be changed 6, 8 or 10-inch stroke, to suit the length of cylinder and amount of water required.

The stock is tapped immediately below the spout for 2-inch pipe, unless otherwise ordered; and if a Standard is wanted for larger than 2-inch pipe we can arrange our Fig. 412, with variable top, at extra list price. Pumps have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

FIG. 780. SIZES, PRICES, ETC.

Stroke.	Suction.	Well Rod.	*Lift.	No. 4.		No. 5.	
				Cipher.	Price.	Cipher.	Price.
6, 8 or 10 in.	2 in. pipe	7-16 and 1 in.	2½ in. cyl., 100 ft. 3 " 60 "	Tomer	$9.00	Tomeda	$9.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water.

GOULDS DEEP WELL LIFT PUMP STANDARD.

FOR HAND AND WIND MILL.

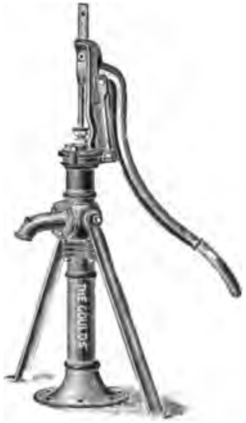


FIG. 764.

Fig 764 represents one of our best known Extra-Heavy Deep-Well Pump Standards, being bolted together underneath the spout, with intermediate flange, and arranged with wind mill top. It is the strongest and best built Standard ever offered to the trade, and for wind mill use is admirably adapted for heavy and constant work. They are successfully used on wells from 100 to 200 feet deep.

Any size from 1¼-inch to 2½-inch pipe can be used with this Standard, but always fitted as below, unless otherwise ordered. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

FIG. 764. SIZES, PRICES, ETC

Stroke.	Suction.	Well Rod.	*Lift.	Cipher.	Price.
6 in.	1½ in. pipe	7-16 in.	2½ in. cyl., 150 ft.	Valise	$17.00
10 "	2 "	7-16 " and 1 in.	3 " 100 "	Valley	18.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

* Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water ; smaller Cylinders in proportionately deeper wells.

GOULDS DEEP WELL FORCE PUMP STANDARD.

FOR HAND AND WIND MILL.

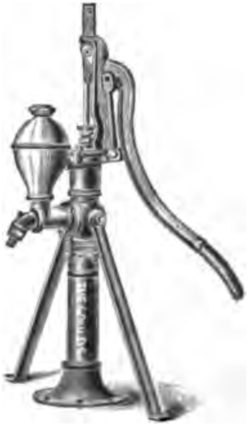


FIG. 765.

Fig. 765 represents our new Wind Mill Deep-Well Force Pump Standard of extra heavy pattern, and constructed in two sections with flange between. This last feature is considered a very great advantage by all who put up these Pumps, for by a change of flanges they can readily be fitted for any size from 1¼ to 2½-inch pipe, thus readily adapting them for every need. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. Always fitted as below unless otherwise ordered. Wind mill slides are not sent unless specially ordered.

FIG. 765. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
6 in.	1½ in. pipe	1¼ in. pipe and 1 in. hose	7-16 in.	2½ in. cyl., 150 ft.	Vellum	$21.00
10 "	2 "	1¼ " " 1 "	7-16 " and 1 in.	3 " 100 "	Valor	22.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

* Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS "STAR" WELL FORCE PUMP STANDARDS.

WITH REVOLVING TOP. FOR HAND AND WIND MILL.

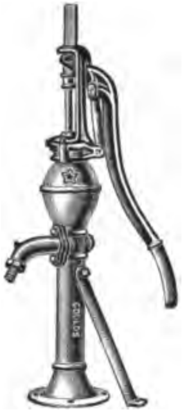
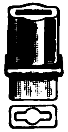


FIG. 422, NO. 0

Light.

Extension Stroke Guide.



(Patent applied for.)

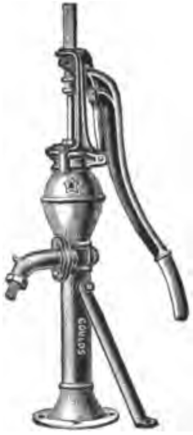


FIG. 422, NO. 1

Medium.

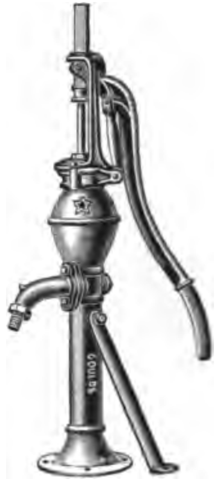


FIG. 422, NO. 2

Heavy.

Our well-known Fig. 422, Wind Mill Force Pump Standard, we now offer in three sizes. Air chamber is formed by enlarging stock above spout. Revolving bearer top is attached by strong through bolts. Outlet is provided back of spout for attaching pipe if desired. All spouts are flanged and bolted, permitting easy exchange for cock spout. Tapped for suction pipe near the spout. Furnished with nut and hose tube, also brace. Standards can be tapped for any size connecting pipe up to and including 2-inch, but unless otherwise ordered, we tap 1¼-inch. With Standards tapped 2-inch we furnish coupling for 1-inch wood sucker rod. Wind mill slides are not sent unless specially ordered. Our new No. 0 Standard has Extension Stroke Guide (see cut), adapting it for 10-inch stroke with wind mill. It has 6-inch stroke by hand.

FIG. 422. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharges.	Well Rod.	*Lift and Force.	No. 0.		No. 1.		No. 2.	
					Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	2½ in. cyl., 100 ft.	Grandyl	$9.50	Vehemen	$10.00	Vehicl	$11.00
10 "	2 "	1¼ " " ¾ "	7-16 and 1 in.	3 " 60 "	....	....	Vehicled	11.00	Veil	12.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard can be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS “STAR” WELL FORCE PUMP STANDARDS.

WITH COCK SPOUT AND REVOLVING TOP, FOR HAND OR WIND MILL.

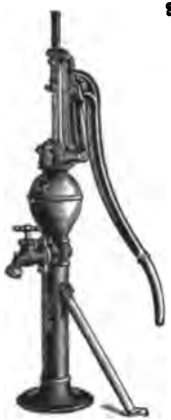
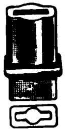


FIG. 423, NO. 0

Light

Extension Stroke Guide.



(Patent applied for.)

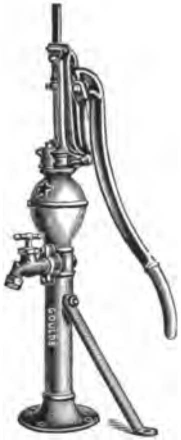


FIG. 423, NO. 1

Medium.

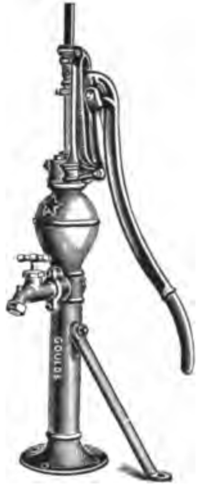


FIG. 423, NO. 2

Heavy.

Fig. 423. Wind Mill Force Pump Standard, is in all respects same as Fig. 422, more fully described on opposite page, except that it has a Cock Spout. When water is forced upward through pipe connected at back of Standard. the cock offers the necessary means for closing spout.

These Force Standards are exceptionally strong and neat of design. Brace and hose connection are furnished. Tapped to receive suction pipe inside of Standard, near the spout.

Can be tapped for any size connecting pipe up to and including 2-inch, but unless otherwise ordered, we tap 1¼ inch. With Standards tapped 2 inch we furnish a coupling for 1-inch wood sucker-rod. Wind mill slides not sent unless specially ordered Our new No. 0 Standard has Extension Stroke Guide (see cut), adapting it for 10-inch stroke with wind mill. It has 6-inch stroke by hand.

FIG. 423. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharges.	Well Rod.	*Lift and Force.	No. 0.		No. 1.		No. 2.	
					Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
6 in.	1¼ in pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	2½ in. cyl., 100 ft.	Granfis	$12.00	Veina	$12 50	Veined	$13.50
10 “	2 “	1¼ “ “ ¾ “	7-16 and 1 in.	3 “ 60 “	....	....	Veinies	13.50	Veinly	14.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery

GOULDS "STAR" WELL FORCE PUMP STANDARD.

WITH AIR CHAMBER ON SPOUT. FOR HAND OR WIND MILL.

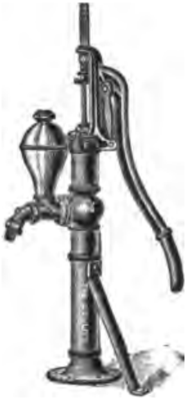


FIG. 401

Fig. 401 represents one of our best forms of Wind Mill Force Pumps, with revolving top, and while not one of the cheapest, possesses features which will commend it to practical men.

The gas pipe is connected in the body, close under the spout, and either 1, 1¼, 1½ or 2-inch can be used if so ordered, but always fitted as below unless otherwise directed. We *cannot* fit this standard for 2½-inch pipe. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

FIG. 401. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharges.	Well Rod.	*Lift and Force.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose.	7-16 in.	2½ in. cyl., 100 ft.	Meat	$13.00
10 "	2 "	1¼ " " ¾ "	7-16 and 1 in.	3 " 60 "	Meek	14.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS "STAR" WELL FORCE PUMP STANDARD.

WITH AIR CHAMBER ON SPOUT. FOR HAND OR WIND MILL.

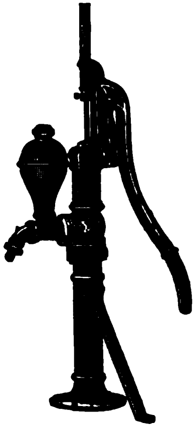


FIG. 402

Fig. 402 is similar in appearance and construction to Fig. 401, described above, except the Standard is built in two sections, with intermediate flange, which is a great convenience in making pipe connections near the spout.

The intermediate flange can be cut for any size of pipe up to and including 2½-inch, but always shipped as below unless otherwise ordered. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Wind mill slides are not furnished unless specially ordered.

FIG. 402. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharges.	Well Rod.	* Lift and Force.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and ¾ in. hose	7-16 in.	2½ in. cyl., 100 ft.	Minec	$13.50
10 "	2 "	1¼ " ¾ "	7-16 and 1 in.	3 " 60 "	Mint	14.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

*Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS "SOUTHERN" WELL FORCE PUMP STANDARD.

WITH COCK SPOUT. FOR HAND AND WIND MILL.

This Wind Mill Force Pump Standard has the intervening flange inserted just above the base. There is a check valve underneath the air chamber, so that these Standards are only adapted to warm climates. The flanges can be screwed for any size of pipe up to and including 3 inches. The upper discharge of air chamber is always fitted for pipe and the nose of the cock for hose. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod. Wind mill slides are not furnished unless specially ordered. Fitted as below unless otherwise directed.

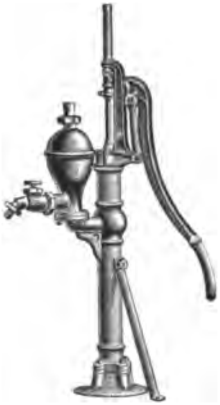


FIG. 413

FIG. 413. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharges.	Well Rod.	*Lift and Force.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe and 1 in. hose	7-16 in.	2½ in. cyl., 100 ft.	Roada	$16.00
10 "	2 "	1¼ " " 1 "	7-16 and 1 in.	3 " 60 "	Roand	17.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

* Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS DEEP WELL FORCE PUMP STANDARD.

WITH COCK SPOUT. FOR HAND AND WIND MILL.

Fig. 1141, Wind Mill Force Pump Standard, is constructed in two sections, with intermediate flange which may be cut for any size pipe up to and including 2½ inches. We always ship as below, unless otherwise ordered. Pump has revolving top, well balanced lever and is fitted with new pattern compression bibb. It has a 2-inch outlet at back of spout. Wind mill slides are not sent unless specially ordered. Price includes a 1-inch wood rod coupling.

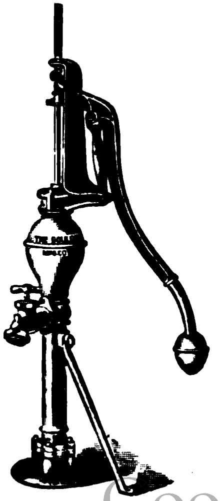

THE GOULDS MFG. CO.

FIG 1141

FIG. 1141. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharges.	Well Rod.	*Lift and Force.	Cipher.	Price.
10 in.	2 in. pipe	2 in. pipe and 1 in. hose	7-16 and 1 in.	3 in. cyl., 75 ft.	Lumtyn	$16.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard and *cost extra.*

* Depth of Wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Anti-Freezing Force Pumps.

Our Anti-Freezing Wind Mill Force Pump, with Regulator, represents the acme of economic pumping. The position of supply tank, the system of piping, etc., is something that the conditions and requirements will determine.

A wind mill pumping plant like the above is complete and self-contained, requires no attendance and almost no care. The working of the regulator is such that the Pump is automatically started and stopped, as the water may fall or rise in the tank. We illustrate this type of Pump under Fig. 1061, page 55; **other Pumps of similar class, pages 52 to 54.**

WIND MILL DISTRIBUTING FORCE PUMP HEADS.

WITH VERTICAL THREE-WAY VALVES.

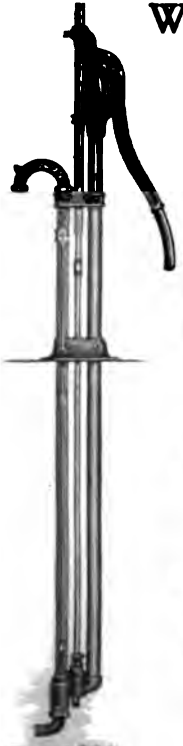


Fig. 1278, "Seneca" Three-Way Distributing Pump Head, is made with wrought pipes extending through the base and forming the standard. A substantial wind mill top is attached to the air chamber pipe. This is so designed, that while allowing 10-inch stroke of wind mill, when lever is attached, the stroke by hand is but 5-inch and work proportionally easier. Base is adjustable. Working head has brass stuffing box. Three-way valve is operated by the single movement of small hand lever.

Fig. 1277 differs from Fig. 1278, in that it is provided with a small packing cylinder or plunger tube, which takes the place of a stuffing box.

Plunger, of two-inch Tubular Well Cylinder, can be withdrawn through these working heads without taking up pump, or disturbing distributing pipe. Specially desirable for tubular wells. Working heads are tapped for 2-inch pipe, but can be bushed to 1¼ or 1½-inch.

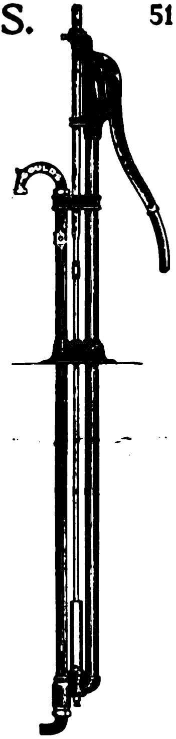


FIG. 1278

FIG. 1277

FIG. 1278. SIZE, PRICE, ETC.

Stroke.	Suction.	Lower Discharge.	Upper Discharge.	Well Rod.	Cipher.	Price.
10 in. mill and 5 in. hand,	2 in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	Maltxan	$15.00

FIG. 1277. SIZE, PRICE, ETC.

Stroke.	Suction.	Lower Discharge.	Upper Discharge.	Well Rod.	Cipher.	Price.
10 in. mill and 5 in. hand,	2 in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	Maltyac	$15.00

Cylinders like Figs. 1230, 1231, pages 62 and 63, or Fig. 142, page 74, are required with these working heads, and *cost extra.*

WIND MILL DISTRIBUTING FORCE PUMP HEADS.

WITH VERTICAL THREE-WAY VALVE.

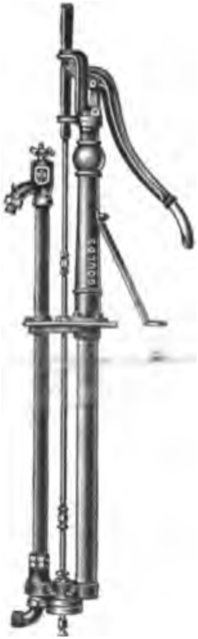


FIG. 1031

Fig. 1031, Wind Mill Distributing Force Pump Head, has 1½-inch air chamber pipe, vertical distributing valve and elbow attachment at bottom outlet. This distributing valve is placed in lower working head beyond the reach of frost, and is opened and closed by turning the wheel above stuffing box in discharge piece. The valve and working parts may be examined and repaired by withdrawing discharge pipe through platform base. By removing cap on lower working head and plate on platform, a 2-inch or 2¾-inch plunger can be drawn up and repaired without removing Pump from well. Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Fig. 1048 is the same as Fig. 1031, but arranged with Fig. 1230, Brass Body Cylinder. Fitted in this manner, Pump may be used in wells up to 30 feet in depth.

FIG. 1031 SIZES, PRICES, ETC.

Stroke,	Suction.	Lower Discharge.	Upper Discharge.	Well Rod.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	Aslake	$17.00
Adjustable, 6, 8, or 10 in.	2 "	1¼ "	¾ "	7-16 and 1 in.	Awless	18.50

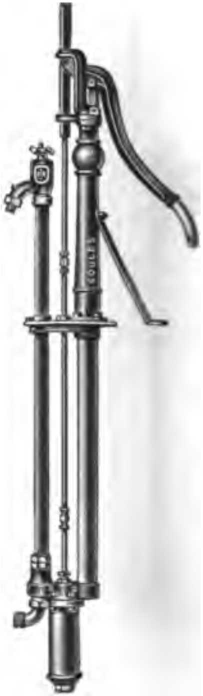


FIG. 1048

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with Fig. 1031 and *cost extra.*

FIG. 1048. SIZES, PRICES, ETC.

Stroke.	With Brass Body Cylinder.	Suction.	Lower Discharge.	Upper Discharge.	*Lift and Force.	WITH BRASS BODY CYLINDER.	
						Cipher.	Price.
6 in.	2½ x 10½ in.	1¼ in. pipe	1¼ in. pipe	¾ in. hose	125 ft.	Bonce	$21.00
Adjustable, 6, 8 or 10 in.	2½ x 14 "	1¼ "	1¼ "	¾ '	75 "	Bondhol	23.50

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

WIND MILL DISTRIBUTING FORCE PUMP HEADS.

WITH VERTICAL THREE-WAY VALVE.

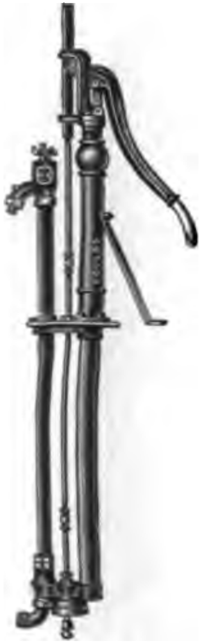


FIG. 1033

Fig. 1033, Wind Mill Distributing Force Pump Head, has 2-inch air chamber pipe, vertical distributing valve and elbow attachment at bottom outlet.

In these Pumps, we have embodied all the best features of Pumps in this class. The distributing valve is placed in lower working head beyond the reach of frost, and is opened and closed by turning the wheel above stuffing box in discharge piece. This valve and working parts may be examined and repaired by withdrawing discharge pipe through platform base. By removing cap of lower working head and plate on platform, a 2-inch or 2¾-inch plunger can be drawn up and repaired without removing Pump from the well.

Pumps tapped for 2-inch pipe have coupling for 1-inch wood rod.

Fig. 1045 is practically the same as Fig. 1033, and is arranged with Fig. 1230, Brass Body Cylinder, as ordered, screwed into lower working head, thus adapting it in this form for shallow wells of 30 feet depth.

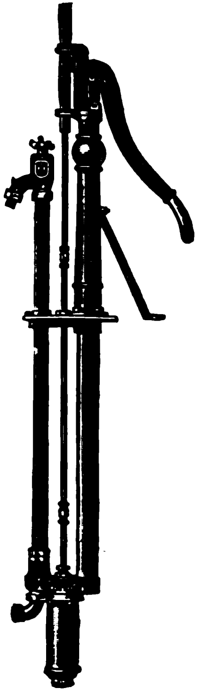


FIG. 1045

FIG. 1033. SIZES, PRICES, ETC.

Stroke.	Suction.	Lower Discharge.	Upper Discharge.	Well Rod.	Cipher.	Price.
6 in. Adjustable, 6, 8 or 10 in.	1¼ in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	Asleep	$18.00
	2 "	1¼ "	¾ "	7-16 and 1 in.	Awlwort	19.50

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with Figs. 1033, and *cost extra.*

FIG. 1045. SIZES, PRICES, ETC.

Stroke.	With Brass Body Cylinder.	Suction.	Lower Discharge.	Upper Discharge.	*Lift and Force.	WITH BRASS BODY CYLINDER.	
						Cipher.	Price.
6 in. Adjustable, 6, 8 or 10 in.	2½ x 10½ in,	1¼ in. pipe	1¼ in. pipe	¾ in. hose	125 ft.	Bonair	$22.00
	2½ x 14 "	1¼ "	1¼ "	¾ "	75 "	Bonbon	24.50

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

WIND MILL DISTRIBUTING FORCE PUMP HEADS.

WITH VERTICAL THREE-WAY VALVE.

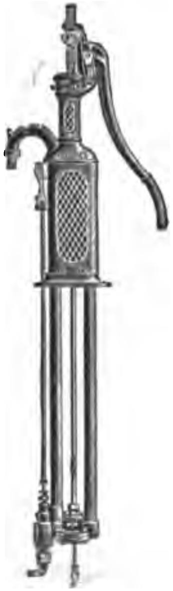


FIG 862

Fig. 862, Distributing Head, has stock formed by two handsome sides bolted together over the wrought pipes. Bearer top revolves to any point. The stuffing boxes are both below ground and cannot be affected by the frost. At the lower working head both the top and bottom attachments are bolted to it, and by simply removing these the plunger and rod may be drawn up through the standard. The distributing valve is placed in a brass-lined chamber, and is raised and lowered by a single movement of the small handle shown at side of standard. Air chamber pipe is 1½-inch; discharge pipe 1¼-inch.

Fig. 866 (not illustrated) is same as Fig. 862, except it has adjustable 6, 8 or 10-inch stroke.

Fig. 863 is very similar to Pumps above described, but somewhat lighter, having 1¼-inch air-chamber pipe and 1-inch discharge pipe. Always fitted for 1¼-inch suction.

Prices below include hose tube for spout and elbow for lower discharge. Wind mill slides are not sent unless especially ordered.

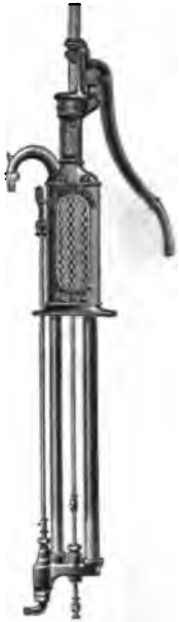


FIG 863

FIGS. 862 AND 866. SIZES, PRICES, ETC.

	Stroke.	Suction.	Lower Discharge.	Upper Discharge.	Well Rod.	Cipher.	Price.
Fig. 862	6-in.	1¼ in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	Vow	$18.50
" 866	Adjustable, 6, 8, 10 in.	2 "	1¼ "	¾ "	7-16 in. iron 1 " wood	Wafture	20.00

FIG. 863. SIZE, PRICE, ETC.

Stroke.	Suction.	Lower Discharge.	Upper Discharge.	Well Rod.	Cipher.	Price.
6 in.	1¼ in. pipe	1¼ in. pipe	¾ in. hose	7-16 in.	Wag	$15.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with these Pump Heads and cost extra.

WIND MILL REGULATOR FORCE PUMP HEAD.

WITH VERTICAL THREE-WAY VALVE.

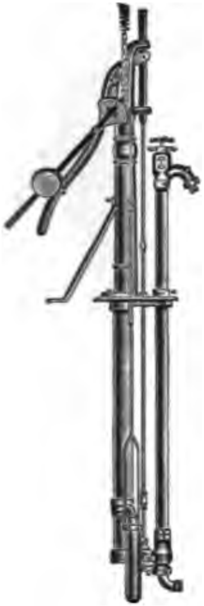


FIG. 1061

Wheel in operation.

Fig. 1061, Regulator Force Pump Head (shown to the left when wheel is in operation and to the right when wheel is held out of gear) is a modification of our Fig. 1033, Anti-Freezing Force Pump Head, more fully described on page 53, to which we refer. In operation, the Regulator controls automatically the Wind Mill. The arrangement is such that when the supply tank is full, a common float valve closes inlet to tank and the discharge is forced into hydraulic cylinder, shown raised in engraving to the left. By this operation, the hydraulic cylinder is forced down, as shown in engraving to the right, carrying with it the connecting rod and chain, actuating the cam or chain sheave above, which in turn, by connecting wire, throws mill out of gear. As the water in the tank may lower, the inlet in pipe is re-opened and the operation reversed. The advantages of this automatic control can hardly be overestimated. It should not be forgotten that Pump and Mill work only when tank requires filling, and thus saves the wear and tear. Pumps have coupling for 1-inch wood rod.

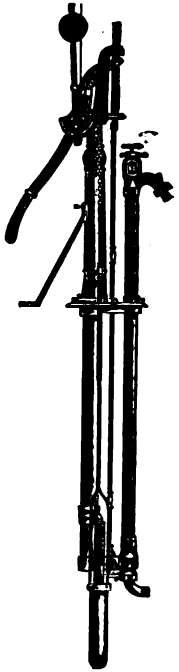


FIG. 1061

Wheel held out of gear.

FIG. 1061. SIZE, PRICE, ETC.

Adjustable Stroke.	Suction.	Lower Discharge.	Upper Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
6, 8 or 10 in.	2 in. pipe	1¼ in. pipe	¾ in. hose	7-16 and 1 in.	2½ in. cyl., 125 ft. 3 " " 85 "	Chicaw	$30.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Head and *cost extra.*

*Depth of Well to which Pump may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS WELL FORCE PUMP PACKING-BOX HEADS.

FOR WIND MILLS.

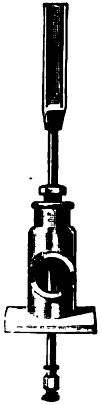


FIG 216

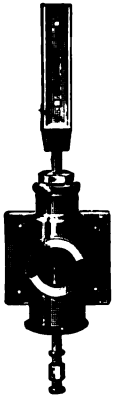


FIG. 217

We represent herewith our several styles Wind Mill Packing-Box Heads with brass glands and brass-cased rods. Fig. 1007 represents an all-brass Packing-Box Head for open or drilled wells. The discharge is formed by screwing a tee in suction pipe below. This, however, is not included in our price.

FIG. 216. SIZES, PRICES, ETC.

Size Pipe.	Length Stroke	Well Rod.	Cipher.	Price.
1¼ in.	12 in.	7-16 in.	Diveless	$5.00
1½ "	12 "	7-16 "	Listnis	5.50
2 "	12 "	7-16 "	Listnoz	6.00
2½ "	12 "	½ "	Listnun	7.00
3 "	12 "	½ "	Loagan	7.50
4 "	12 "	⅝ "	Loageg	9.00

FIG. 217. SIZES, PRICES, ETC

Size Pipe.	Length Stroke	Well Rod	Cipher.	Price.
1¼ in.	12 in.	7-16 in.	Dodging	$5.00
1½ "	12 "	7-16 "	Loagim	5.50
2 "	12 "	7-16 "	Loagus	6.00
2½ "	12 "	½ "	Lumpod	7.00
3 "	12 "	½ "	Lumnur	7.50
4 "	12 "	⅝ "	Lumrat	9.00

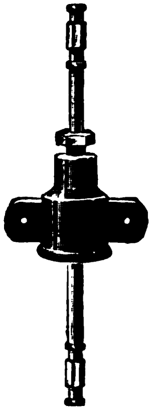


FIG. 707

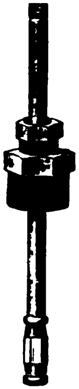


FIG. 1007

FIG. 707. SIZES, PRICES, ETC.

Size Pipe.	Length Stroke	Well Rod.	Cipher.	Price.
1 in.	12 in.	7-16 in.	Lumrig	$3.00
1¼ "	12 "	7-16 "	Lumroe	3.00
1½ "	12 "	7-16 "	Lumrum	3.00
2 "	12 "	½ "	Lumryl	3.00
2½ "	12 "	½ "	Lumsab	3.75

FIG. 1007. SIZES, PRICES, ETC.

Size Pipe.	Length Stroke	Well Rod.	Cipher.	Price.
1 in.	12 in.	7-16 in.	Lumsin	$4.00
1¼ "	12 "	7-16 "	Lumsod	4.00
1½ "	12 "	7-16 "	Lumsus	5.00
2 "	12 "	7-16 "	Lumthc	6.00
2½ "	12 "	7-16 "	Lumtim	7.50
3 "	12 "	½ "	Lumtope	10.00

GOULDS FORCE PUMP HEAD.

WITH WIND MILL TOP AND WOOD LEVER.

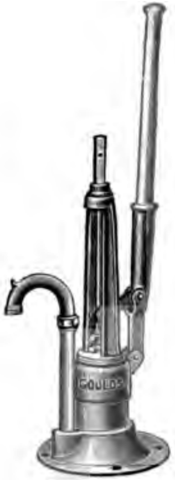


FIG. 1260

Fig. 1260 is offered as a very desirable Force Head for operating by wind mill or by hand. It is compact and strong. Has double guide for polished rod. With wind mill allows 10-inch stroke, for hand 5-inch stroke. A powerful leverage is afforded, making easy work. We regularly furnish tapped for 1¼-inch pipe, but can tap for 1½ or 2-inch if so ordered.

FIG. 1260. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	Cipher.	Price.
10 in. Mill and 5 in. Hand	2 in. pipe	¾ in. hose and 1 in. pipe	7-16 in.	Lumtux	$7.50

GOULDS WELL FORCE PUMP WORKING HEADS.

FOR HAND AND WIND MILL.

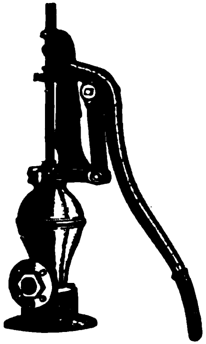


FIG. 685

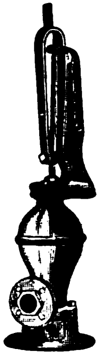


FIG. 686

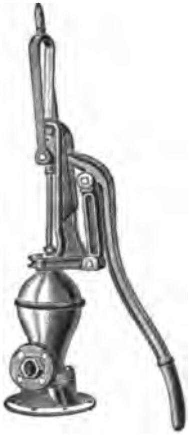


FIG. 690

These Working Heads are fitted with revolving top and sectional base. They are exceptionally strong and heavy, and adapted for use wherever wind mill or other power can be used. Flange is fitted for 1, 1¼, 1½, 2 or 2½-inch pipe, as ordered. Working heads tapped for 2-inch pipe have coupling for 1-inch wood rod. Forked rod furnished at extra price. Wind mill slides are not furnished unless especially ordered.

SIZES, PRICES, ETC.

Fig.	Suction.	Discharge.	Well Rod.	*Lift and Force.	6-INCH STROKE.		10-INCH STROKE.	
					Cipher.	Price.	Cipher.	Price.
Fig. 685	1¼ in. pipe	1¼ in. pipe	7-16 to 1 in.	2½ in. cyl., 100 ft.	Sashaa	$13.00	Sate	$14.00
" 686	1¼ "	1¼ "	7-16 " 1 "	3 " 60 "	Toll	15.00	Toller	16.00
" 690	1¼ "	1¼ "	7-16 " 1 "	3 " 60 "	Topap	17.00	Topman	18.00

Cylinders as shown, pages 62 to 69, are required with these Working Heads, and *cost extra.*

* **Depth of Wells** to which Working Heads may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from **supply to point of delivery.**

GOULDS ARTESIAN WELL WORKING HEADS.

WITH DOUBLE ROD GUIDE AND POWER CONNECTION.

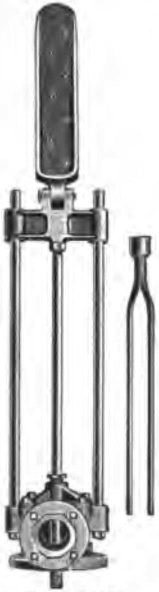


FIG. 979

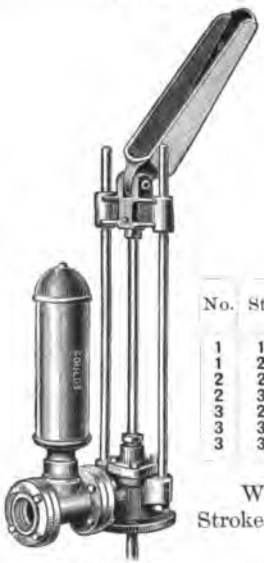


FIG. 1249

Fig. 979 is especially designed to use with our Artesian Pump Cylinders. Piston rod is kept in perfect alignment by double guides at side, while stuffing box below adapts it for forcing equally as well as raising water. The power attachment is hinged and made to fit wood rod of wind mill, though it may be readily adapted for any other power and connecting rod.

Fig. 1249 is of same construction as Fig. 979, with the addition of a large air chamber, which adapts it for working against heavy head. Wood rod coupling will be furnished when ordered, at extra price. Well rod is size iron or wood rod ordered.

FIGS. 979 AND 1249. SIZES, PRICES, ETC.

No.	Stroke.	Suction.	Discharge.	*Lift and Force.	Fig. 979. (Hendajl)	Fig. 1249. (Hendibs)
1	16 in.	2, 2½ or 3 in. pipe	1, 1¼ or 1½ in. pipe	2¾ in. cyl., 300 ft.	$15.00	$25.00
1	24 "	2, 2½ or 3 "	1, 1¼ or 1½ "	2¾ " 300 "	17.50	27.50
2	24 "	3½, 4 or 4½ "	1½, 2 or 2½ "	4¼ " 250 "	30.00	40.00
2	30 "	3½, 4 or 4½ "	1½, 2 or 2½ "	4¼ " 250 "	32.50	42.50
3	24 "	5 or 6 "	2½ or 3 "	5¾ " 200 "	35.00	50.00
3	30 "	5 or 6 "	2½ or 3 "	5¾ " 200 "	37.50	52.50
3	36 "	5 or 6 "	2½ or 3 "	5¾ " 200 "	40.00	55.00

With Cipher always specify number of Head and length of Stroke.

DIFFERENTIAL POWER WORKING HEAD.

FOR OPERATING DEEP WELL PUMPS.

In Fig. 978 we illustrate a Power Pump Head with Differential Plunger, to be used with our Fig. 650, Geared Driving Shaft, page 103, for operating Artesian Cylinders in deep wells.

We should always be advised diameter of Lower Working Cylinder, that we may proportionate this Upper Differential Plunger to have one-half the displacement of Plunger in Lower Cylinder. This contributes to even delivery of water and distribution of power.

Pump Head may be operated by Wind mill or other machine power.

FIG. 978. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
10 in.	2 to 6 in.	2 to 4 in.	For size iron or wood rod ordered		Altrical	$90.00
12, 16, 18 "	2 to 6 "	2 to 4 "		3¼ in. cyl., 500 ft.	Altrices	95.00
20, 22, 24 "	2 to 6 "	2 to 4 "		3¾ " 400 "	Caper	100.00
26, 28, 30 "	2 to 6 "	2 to 4 "		4¾ " 300 "	Careful	115.00
36 "	2 to 6 "	2 to 4 "		5¾ " 200 "	Watery	135.00

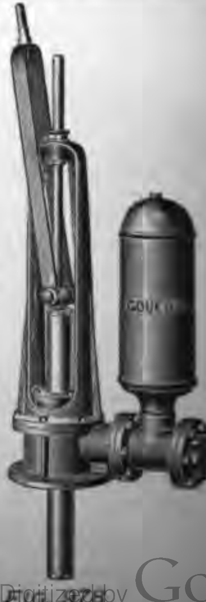


FIG. 978

See Pages 67 to 69 for Brass Artesian Cylinders, adapted for use with these heads.

*Vertical lift and force, from surface of water to point of delivery, to which Working Head can be adapted by placing Cylinder within 15 or 20 feet of water. For pumping to less elevations larger Cylinders can be used and for greater elevations smaller Cylinders.

GOULDS ARTESIAN WELL WORKING HEAD.

WITH FORKED ROD, PITMAN AND GUIDE.

Fig. 1127, Artesian Well Working Head, is provided with stuffing box, guide, guide rod, brass-cased piston rod and pitman for machine power. It has an intermediate flange for pipe, connection, sizes up to and including 3-inch. Discharge for size pipe up to and including 3-inch. Forked rod is supplied with each Working Head.

We can furnish everything complete for wells of any depth.

Always specify size suction and discharge pipe.

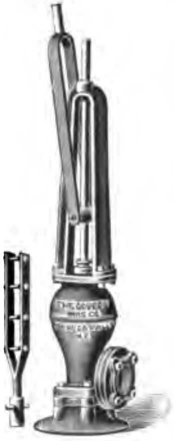


FIG. 1127

FIG. 1127. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
10 in.	1¼ to 3 in. pipe	1¼ to 3 in. pipe	For size iron or wood rod ordered.	2¾ in. cyl., 225 ft.	Dotgade	$30.00
16 "	1¼ to 3 "	1¼ to 3 "		3¼ " 175 "	Dotgib	35.00
				3¾ " 100 "		

Cylinders like Figs. 1230, 548, 904, pages 62 to 69, are required with this Working Head and *cost extra.*

*Depth of Well to which Working Head may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS ARTESIAN WELL WORKING HEAD.

Fig. 446 shows a Working Head provided with piston rod, stuffing box, guide, guide rod, pitman and stub end, for operating Fig. 904, Artesian Pump Cylinder, or other long stroke Working Barrels.

This Pump Head may be operated by any machine power and is connected to cylinder by pipe and rod of sufficient length to reach to the bottom of the well or mine.

We can furnish everything complete for wells of any depth.

Always specify size suction and discharge pipe.

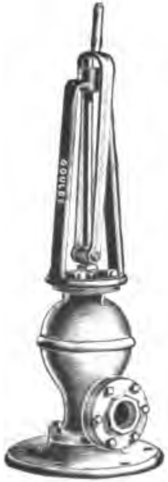


FIG. 446

FIG. 446. SIZES, PRICES, ETC.

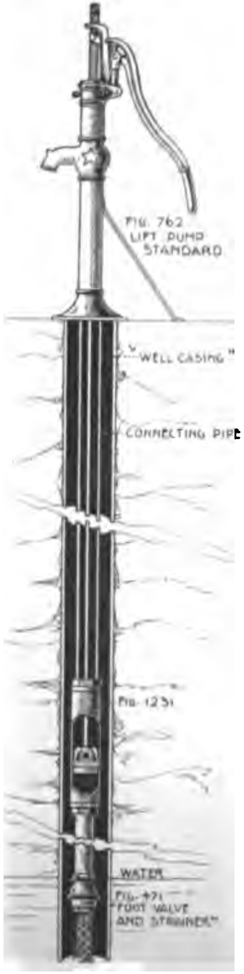
Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	Cipher.	Price.
15 in.	2 to 5 in. pipe	1½ to 2½ in. pipe	For size iron or wood rod ordered.	2¾ in. cyl., 400 ft.	Dingler	$50.00
18 "	2 to 5 "	1½ to 2½ "		3¼ " 300 "	Direful	55.00
24 "	2 to 5 "	1½ to 2½ "		3¾ " 225 "	Dished	60.00
30 "	2 to 5 "	1½ to 2½ "		4¾ " 150 "	Torsel	70.00
36 "	2 to 5 "	1½ to 2½ "			Tortvd	80.00

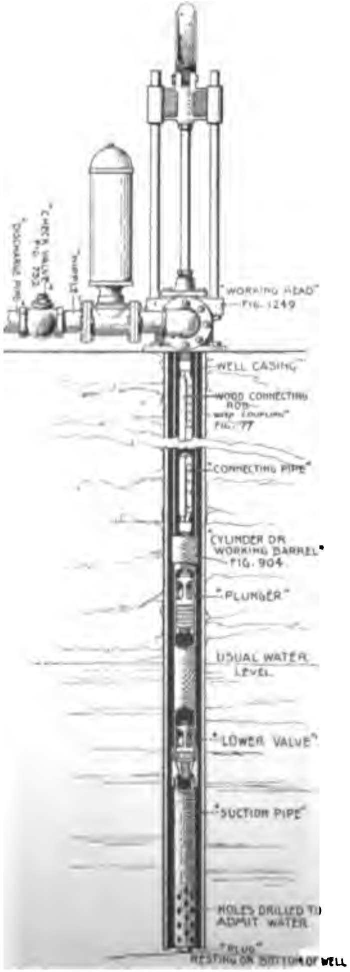
Cylinders like Figs. 1230, 548, 904, pages 62 to 69, are required with this Working Head and *cost extra.*

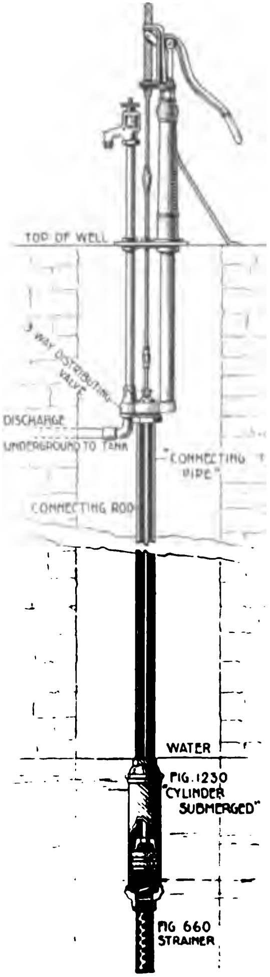
*Depth of Well to which Working Head may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

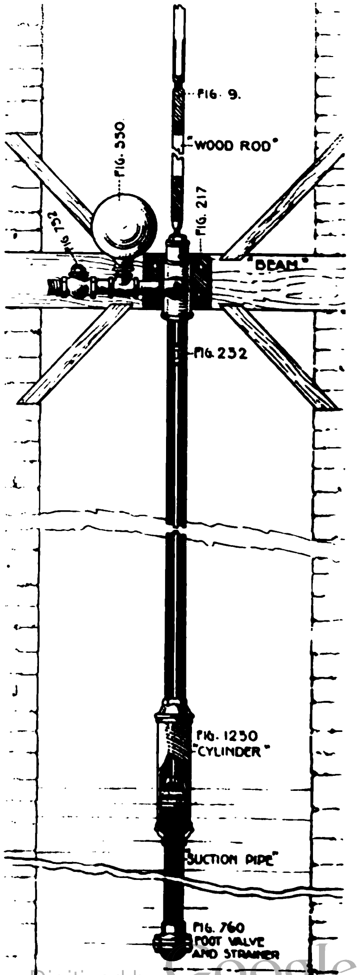
PLANS FOR PLACING WORKING HEADS, CYLINDERS, ETC.

GIVING TECHNICAL TERMS USED IN OUR CATALOGUE.







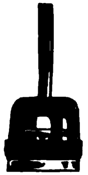


IMPROVED PUMP CYLINDERS OR WORKING BARRELS.

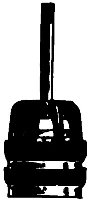
FOR OPEN, DUG, DRIVEN OR BORED AND CASED WELLS.

We have remodeled our entire line of Pump Cylinders or Working Barrels. These changes afford substantial improvements and render more simple and in a larger measure interchangeable.

Briefly: We offer under a single Fig. in each class, Iron, Brass Lined, Brass Body and all Brass Cylinders, as follows:


"AA" PLUNGER

- **Fig. 1230,** with screwed outside caps and leather lower valve.
- **Fig. 1231,** with screwed inside caps and leather lower valve.
- **Fig. 1235,** with screwed outside caps and metal lower valve.
- **Fig. 1236,** with screwed inside caps and metal lower valve.
- **Fig. 1267,** with bolted outside caps and leather lower valve.
- **Fig. 1268,** with bolted outside caps and metal lower valve.


"BB" PLUNGER

Ten and one half-inch Body Cylinders have "AA" plunger with metal poppet and single crimped leather.

Twelve-inch, 14-inch, 16-inch, 18-inch, 20-inch and 22-inch Body Cylinders have "BB" plunger with metal poppet and double crimped leathers.

"UNIVERSAL" BRONZE VALVE AND SEAT.

(PATENT APPLIED FOR.)

Fig. 1229, "Universal" Bronze Valve and Seat, is interchangeable with leather valve in all of our Cylinders, both inside and outside capped. Dealers can carry in stock and effect change to suit demand. Our engravings show construction, and we assert there is not a simpler, more effective or durable Lower Valve made. The valve seat is made a part of the valve, saving the expense of separate brass valve seat.

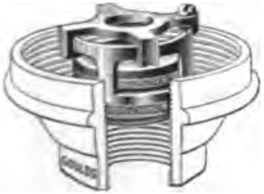


FIG. 1229

Shown in an "outside" Cylinder attachment.

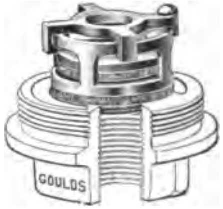


FIG. 1229

Shown in "inside" Cylinder attachment.

FIG. 1229. SIZES, PRICES. ETC.

Diameter of Cylinders	2½, 2¾, 3 ins.	3¼ and 3½ ins.	4 and 4½ ins.
For Cylinders with attachments tapped	1¼ in.	1½ in.	2 in.
Price, Fig. 1229 Compl. (not including Cylinder attachment)	$1.25	$1.75	$2.50

TABLE SHOWING EXTREME OUTSIDE DIAMETER OF CYLINDERS.

Inside Diameter, Inches	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6	8
EXTREME OUTSIDE DIAMETER.												
Figs. 1230 and 1235, Iron and Brass Lined	3 3-16	3⅜	3 11-16	3 15-16	4 3-16	4 7-16	4 11-16	5¼	5⅞	6½	7½	9¾
Figs. 1230 and 1235, Brass Body	2⅝	2⅞	3⅛	3⅜	3⅝	3⅞	4⅛	4 11-16	5½	6	7	
Figs. 1231 and 1236, Iron and Brass Lined	2⅝	2⅞	3⅛	3⅜	3⅝	3 15-16	4 3-16	4¾	5⅛	5¾	6¾	8¾
Figs. 1231 and 1236, Brass Body	2¼	2½	2¾	3	3¼	3½	3¾	4¼	4⅞	5⅜	6⅜	8⅜

GOULDS PUMP CYLINDERS OR WORKING BARRELS.

FIGS. 1230, 1231—10½ INCHES LONG. "AA" PLUNGER AND LEATHER LOWER VALVE.

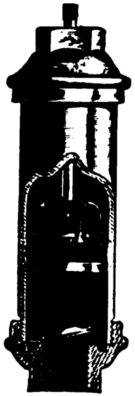


FIG. 1230
Outside Attachment.

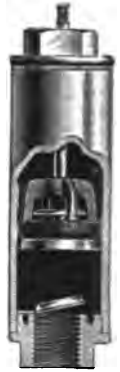


FIG. 1231
Inside Attachment.

Diameter and Length.	Fig. 1230.		Fig. 1231.	Size Pipe.	Well Rod.	Iron.	Brass Lined. Brass Cage and Valve Plunger.	Brass Body. All Brass Plunger.	All Brass.
	Stroke.	Capacity per Stroke.	Stroke.						
2 x 10½ in.	6 in.	.08 gal.	6 in.	1 in.	⅜ in.	$3.75	$7.50	$8.00	$10.75
2¼ x 10½ "	6 "	.10 "	6 "	1 "	⅜ "	4.00	7.75	8.25	11.00
2½ x 10½ "	6 "	.13 "	6 "	1¼ "	⅜ "	4.35	8.00	8.50	12.25
2¾ x 10½ "	6 "	.15 "	6 "	1¼ "	⅜ "	4.70	8.50	9.00	12.75
3 x 10½ "	6 "	.18 "	6 "	1¼ "	⅜ "	5.00	9.00	9.75	13.50
3¼ x 10½ "	6 "	.21 "	6 "	1½ "	⅜ "	6.00	9.75	10.50	14.75
3½ x 10½ "	6 "	.25 "	6 "	1½ "	7-16 "	7.00	10.50	11.50	16.75
4 x 10½ "	6 "	.32 "	6 "	2 "	7-16 "	9.00	13.00	15.50	21.50

FIGS. 1230, 1231—12, 14, 16, 18 INCHES LONG, "BB" PLUNGER AND LEATHER LOWER VALVE.

Diameter and Length.	Fig. 1230.		Fig. 1231.	Size Pipe.	Well Rod.	Iron.	Brass Lined. Brass Cage and Valve Plunger.	Brass Body. All Brass Plunger.	All Brass.
	Stroke.	Capacity per Stroke.	Stroke.						
2 x 12 in.	8 in.	.11 gal.	6 in.	1 in.	⅜ in.	$5.50	$8.00	$9.25	$11.25
2¼ x 12 "	8 "	.14 "	6 "	1 "	⅜ "	5.75	8.25	9.50	11.50
2½ x 12 "	8 "	.17 "	6 "	1¼ "	⅜ "	6.00	8.50	9.75	12.75
2¾ x 12 "	8 "	.20 "	6 "	1¼ "	⅜ "	6.50	9.00	10.50	13.25
3 x 12 "	8 "	.24 "	6 "	1¼ "	⅜ "	7.00	9.50	11.00	14.00
3¼ x 12 "	8 "	.29 "	6 "	1½ "	⅜ "	8.00	10.25	12.00	15.25
3½ x 12 "	8 "	.33 "	6 "	1½ "	7-16 "	9.00	11.25	13.75	17.50
4 x 12 "	8 "	.44 "	6 "	2 "	7-16 "	11.50	14.25	18.00	22.50
2 x 14 "	10 "	.14 "	8 "	1 "	⅜ "	6.00	8.50	9.75	13.00
2¼ x 14 "	10 "	.17 "	8 "	1 "	⅜ "	6.25	9.00	10.25	13.50
2½ x 14 "	10 "	.21 "	8 "	1¼ "	⅜ "	6.50	9.25	10.50	14.75
2¾ x 14 "	10 "	.25 "	8 "	1¼ "	⅜ "	7.00	9.75	11.25	15.50
3 x 14 "	10 "	.30 "	8 "	1¼ "	⅜ "	7.50	10.25	11.75	16.25
3¼ x 14 "	10 "	.36 "	8 "	1½ "	⅜ "	8.75	11.00	12.75	17.75
3½ x 14 "	10 "	.41 "	8 "	1½ "	7-16 "	10.00	12.25	14.75	21.00
4 x 14 "	10 "	.54 "	8 "	2 "	7-16 "	13.00	15.75	19.00	26.50
4½ x 14 "	8 "	.55 "	6 "	2 "	½ "	17.50	24.00	28.00	36.00
5 x 14 "	8 "	.68 "	6 "	2½ "	½ "	22.50	33.00	38.00	50.00
6 x 14 "	8 "	.98 "	6 "	3 "	⅝ "	33.50	50.00	56.00	70.00
2 x 16 "	12 "	.16 "	10 "	1 "	⅜ "	6.00	9.00	10.50	13.75
2¼ x 16 "	12 "	.21 "	10 "	1 "	⅜ "	6.50	9.75	11.25	14.50
2½ x 16 "	12 "	.26 "	10 "	1¼ "	⅜ "	7.00	10.25	11.75	16.00
2¾ x 16 "	12 "	.31 "	10 "	1¼ "	⅜ "	7.50	10.75	12.25	16.50
3 x 16 "	12 "	.37 "	10 "	1¼ "	⅜ "	8.00	11.25	12.75	17.25
3¼ x 16 "	12 "	.43 "	10 "	1½ "	⅜ "	9.75	12.00	14.00	19.00
3½ x 16 "	12 "	.50 "	10 "	1½ "	7-16 "	11.25	13.50	16.00	22.25
4 x 16 "	12 "	.65 "	10 "	2 "	7-16 "	14.50	17.50	20.50	28.00
4½ x 16 "	10 "	.69 "	8 "	2 "	½ "	18.50	25.00	30.50	38.75
5 x 16 "	10 "	.85 "	8 "	2½ "	½ "	25.00	35.00	42.00	53.50
6 x 16 "	10 "	1.22 "	8 "	3 "	⅝ "	37.50	55.00	62.00	75.00
4½ x 18 "	12 "	.83 "	10 "	2 "	½ "	22.50	30.00	35.00	43.25
5 x 18 "	12 "	1.02 "	10 "	2½ "	½ "	30.00	40.00	47.00	58.50
6 x 18 "	12 "	1.47 "	10 "	3 "	⅝ "	42.50	60.00	67.00	80.00
8 x 18 "	8 "	1.74 "	6 "	4 "	¾ "	90.00	115.00	134.00	160.00

Longer lengths and "Cipher" on next page.
NOTE—Above Cylinders are all adapted to receive our "Universal" Bronze Valve and Seat.

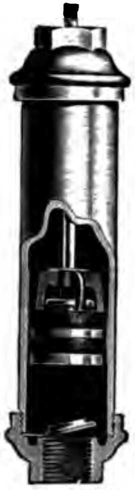


FIG. 1230
Outside Attachment.

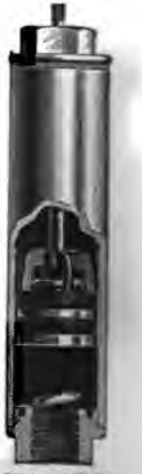


FIG. 1231
Inside Attachment.

GOULDS PUMP CYLINDERS OR WORKING BARRELS.

FIGS. 1230, 1231—20 AND 22 INCHES LONG, "BB" PLUNGER AND LEATHER LOWER VALVE.

Diameter and Length.	Fig. 1230.		Fig. 1231.	Size Pipe.	Well Rod.	Brass Body. All Brass Plunger.	All Brass.
	Stroke.	Capacity per Stroke.	Stroke.				
2 x 20 in.	16 in.	.21 gal.	14 in.	1 in.	⅜ in.	$11.50	$14.75
2¼ x 20 "	16 "	.27 "	14 "	1 "	⅜ "	12.75	16.00
2½ x 20 "	16 "	.34 "	14 "	1¼ "	⅜ "	13.50	17.75
2¾ x 20 "	16 "	.41 "	14 "	1¼ "	⅜ "	14.25	18.50
3 x 20 "	16 "	.49 "	14 "	1¼ "	⅝ "	14.75	19.25
3¼ x 20 "	16 "	.57 "	14 "	1½ "	⅝ "	16.00	21.00
3½ x 20 "	16 "	.66 "	14 "	1½ "	7-16 "	19.00	25.25
4 x 20 "	16 "	.87 "	14 "	2 "	7-16 "	24.00	31.50
4½ x 22 "	16 "	1.10 "	14 "	2 "	⅝ "	43.00	52.25
5 x 22 "	16 "	1.36 "	14 "	2½ "	⅝ "	57.00	68.50
6 x 22 "	16 "	1.96 "	14 "	3 "	⅝ "	77.00	90.00
8 x 22 "	12 "	2.61 "	10 "	4 "	¾ "	154.00	180.00

*Cipher—**Halgop**, Fig. 1230, Iron.
" **Halgub**, " 1230, Brass-Lined.
" **Harfcot**, " 1230, Brass Body.
" **Harfduc**, " 1230, All Brass.

Cipher—**Hauma**, Fig. 1231, Iron.
" **Haumic**, " 1231, Brass-Lined.
" **Haumon**, " 1231, Brass Body.
" **Haumud**, " 1231, All Brass.

BOLT ATTACHMENT CYLINDERS, LEATHER LOWER VALVE.

FIG. 1267. 10½ INCHES LONG, "AA" PLUNGER.

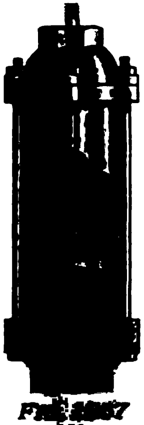


FIG. 1267

Diameter and Length.	Stroke.	Capacity per Stroke.	Size Pipe.	Well Rod.	Iron.	Brass Lined. Brass Cage and Valve Plunger.	Brass Body. All Brass Plunger.	All Brass.
2½ x 10½ in.	6 in.	.13 gals.	1¼ in.	⅜ in.	$4.35	$8.00	$8.50	$12.25
3 x 10½ "	6 "	.18 "	1¼ "	⅜ "	5.00	9.00	9.75	13.50
3½ x 10½ "	6 "	.25 "	1½ "	7-16 "	7.00	10.50	11.50	16.75
4 x 10½ "	6 "	.32 "	2 "	7-16 "	9.00	13.00	15.50	21.50

FIG. 1267—12, 14, 16, 20 INCHES LONG, WITH "BB" PLUNGER.

Diameter and Length.	Stroke.	Capacity per Stroke.	Size Pipe.	Well Rod.	Iron.	Brass Lined. Brass Cage and Valve Plunger.	Brass Body. All Brass Plunger.	All Brass.
2½ x 12 in.	8 in.	.17 gal.	1¼ in.	⅜ in.	$6.00	$8.50	$9.75	$12.75
3 x 12 "	8 "	.24 "	1¼ "	⅜ "	7.00	9.50	11.00	14.00
3½ x 12 "	8 "	.33 "	1½ "	7-16 "	9.00	11.25	13.75	17.50
4 x 12 "	8 "	.44 "	2 "	7-16 "	11.50	14.25	18.00	22.50
2½ x 14 "	10 "	.21 "	1¼ "	⅜ "	6.50	9.25	10.50	14.75
3 x 14 "	10 "	.30 "	1¼ "	⅜ "	7.50	10.25	11.75	16.25
3½ x 14 "	10 "	.41 "	1½ "	7-16 "	10.00	12.25	14.75	21.00
4 x 14 "	10 "	.54 "	2 "	7-16 "	13.00	15.75	19.00	26.50
2½ x 16 "	12 "	.26 "	1¼ "	⅜ "	7.00	10.25	11.75	16.00
3 x 16 "	12 "	.37 "	1¼ "	⅜ "	8.00	11.25	12.75	17.25
3½ x 16 "	12 "	.50 "	1½ "	7-16 "	11.25	13.50	16.00	22.25
4 x 16 "	12 "	.65 "	2 "	7-16 "	14.50	17.50	20.50	28.00
2½ x 20 "	16 "	.34 "	1¼ "	⅜ "	....	....	13.50	17.75
3 x 20 "	16 "	.49 "	1¼ "	⅜ "	....	....	14.75	19.25
3½ x 20 "	16 "	.66 "	1½ "	7-16 "	....	....	19.00	25.25
4 x 20 "	16 "	.87 "	2 "	7-16 "	....	....	24.00	31.50

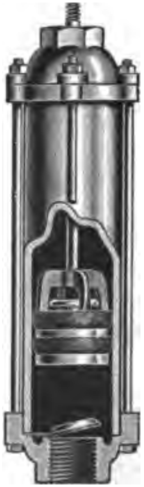


FIG. 1267

*Cipher—**Haumvo**, Fig. 1267, Iron.
" **Haupa**, " 1267, Brass Lined.

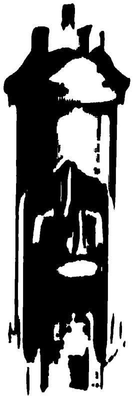
Cipher—**Haupid**, Fig. 1267, Brass Body.
" **Haupod**, " 1267, All Brass.

[illegible]on **always specify** *diameter and length of Cylinder Body.*

[illegible]bove **Cylinders** are all adapted to receive our "Universal" Bronze Valve and Seat.

GOULDS PUMP CYLINDERS OR WORKING BARRELS.

FIG. 1235. 10½ INCHES LONG. "AA" PLUNGER AND "UNIVERSAL" BRONZE VALVE AND SEAT.



[illegible]

Diameter and Length	Stroke	Capacity per Stroke.	Size Pipe.	Well Rod.	Iron.	Brass Lined, Brass Cage and Valve Plunger.	Brass Body, All Brass Plunger.	All Brass.
[illegible] x 10½ in.	8 in.	.08 gals.	1 in.	⅜ in.	$5.50	$8.75	$9.25	$12.00
[illegible]	8 "	.10 "	1 "	⅜ "	5.75	9.00	9.50	12.25
[illegible]	8 "	.13 "	1¼ "	⅜ "	6.10	9.25	9.75	13.50
[illegible]	8 "	.15 "	1¼ "	⅜ "	6.45	9.75	10.25	14.00
[illegible]	8 "	.18 "	1¼ "	⅜ "	6.75	10.25	11.00	14.75
[illegible]	8 "	.21 "	1½ "	⅜ "	8.25	11.50	12.25	16.50
[illegible]	8 "	.25 "	1½ "	7-16 "	9.25	12.25	13.25	18.50
[illegible]	8 "	.32 "	2 "	7-16 "	12.50	15.50	18.00	24.00

FIGS. 1235, 1236 12, 14, 16 AND 18 INCHES LONG. "BB" PLUNGER AND "UNIVERSAL" BRONZE VALVE AND SEAT.

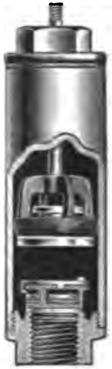
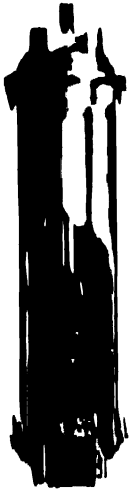


FIG. 1236
Inside Attachment.



[illegible]

Diameter and Length	Fig. 1235. Stroke	Fig. 1235. Capacity per Stroke.	Fig. 1236. Stroke.	Size Pipe.	Well Rod.	Iron.	Brass Lined, Brass Cage and Valve Plunger.	Brass Body, All Brass Plunger.	All Brass.
[illegible]	[illegible]	[illegible] gals.	6 in.	1 in.	⅜ in.	$7.25	$9.25	$10.50	$12.50
[illegible]	[illegible]	[illegible]	6 "	1 "	⅜ "	7.50	9.50	10.75	12.75
[illegible]	[illegible]	[illegible]	6 "	1¼ "	⅜ "	7.75	9.75	11.00	14.00
[illegible]	[illegible]	[illegible]	6 "	1¼ "	⅜ "	8.25	10.25	11.75	14.50
[illegible]	[illegible]	[illegible]	6 "	1¼ "	⅜ "	8.75	10.75	12.25	15.25
[illegible]	[illegible]	[illegible]	6 "	1½ "	⅜ "	10.25	12.00	13.75	17.00
[illegible]	[illegible]	[illegible]	6 "	1½ "	7-16 "	11.25	13.00	15.50	19.25
[illegible]	[illegible]	[illegible]	6 "	2 "	7-16 "	15.00	16.75	20.50	25.00
[illegible]	[illegible]	[illegible]	Same as Fig. 1235.	1 "	⅜ "	7.75	9.75	11.00	14.25
[illegible]	[illegible]	[illegible]		1 "	⅜ "	8.00	10.25	11.50	14.75
[illegible]	[illegible]	[illegible]		1¼ "	⅜ "	8.25	10.50	11.75	16.00
[illegible]	[illegible]	[illegible]		1¼ "	⅜ "	8.75	11.00	12.50	16.75
[illegible]	[illegible]	[illegible]		1¼ "	⅜ "	9.25	11.50	13.00	17.50
[illegible]	[illegible]	[illegible]		1½ "	⅜ "	11.00	12.75	14.50	19.50
[illegible]	[illegible]	[illegible]		1½ "	7-16 "	12.25	14.00	16.50	22.75
[illegible]	[illegible]	[illegible]		2 "	7-16 "	16.50	18.25	21.50	29.00
[illegible]	[illegible]	[illegible]		2 "	½ "	21.00	26.50	30.50	38.50
[illegible]	[illegible]	[illegible]	[illegible]	1 "	⅜ "	7.75	10.25	11.75	15.00
[illegible]	[illegible]	[illegible]	[illegible]	1 "	⅜ "	8.25	11.00	12.50	15.75
[illegible]	[illegible]	[illegible]	[illegible]	1¼ "	⅜ "	8.75	11.50	13.00	17.25
[illegible]	[illegible]	[illegible]	[illegible]	1¼ "	⅜ "	9.25	12.00	13.50	17.75
[illegible]	[illegible]	[illegible]	[illegible]	1¼ "	⅜ "	9.75	12.50	14.00	18.50
[illegible]	[illegible]	[illegible]	[illegible]	1½ "	⅜ "	12.00	13.75	15.75	20.75
[illegible]	[illegible]	[illegible]	[illegible]	1½ "	7-16 "	13.50	15.25	17.75	24.00
[illegible]	[illegible]	[illegible]	[illegible]	2 "	7-16 "	18.00	20.00	23.00	30.50
[illegible]	[illegible]	[illegible]	[illegible]	2 "	½ "	22.00	27.50	33.00	41.25
[illegible]	[illegible]	[illegible]	[illegible]	1 "	⅜ "	8.50	10.75	12.25	15.50
[illegible]	[illegible]	[illegible]	[illegible]	1 "	⅜ "	8.75	11.75	13.25	16.50
[illegible]	[illegible]	[illegible]	[illegible]	1¼ "	⅜ "	9.25	12.50	14.00	18.25
[illegible]	[illegible]	[illegible]	[illegible]	1¼ "	⅜ "	9.75	13.00	14.50	18.75
[illegible]	[illegible]	[illegible]	[illegible]	1¼ "	⅜ "	10.25	13.50	15.00	19.50
[illegible]	[illegible]	[illegible]	[illegible]	1½ "	⅜ "	13.00	14.75	16.75	21.75
[illegible]	[illegible]	[illegible]	[illegible]	1½ "	7-16 "	14.75	16.50	19.00	25.25
[illegible]	[illegible]	[illegible]	[illegible]	2 "	7-16 "	19.50	21.75	24.75	32.25
[illegible]	[illegible]	[illegible]	[illegible]	2 "	½ "	26.00	32.50	37.50	45.75

[illegible]

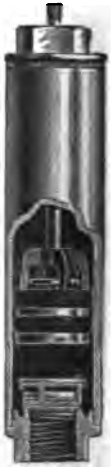


FIG. 1236
Inside Attachment.

GOULDS PUMP CYLINDERS OR WORKING BARRELS.

FIGS. 1235: 1236—20 INCHES LONG, "BB" PLUNGER AND METAL LOWER VALVE.

Diameter and Length.	Fig. 1235. Stroke.	Fig. 1235. Capacity per Stroke.	Fig. 1236. Stroke.	Size Pipe.	Well Rod.	Brass Body. All Brass Plunger.	All Brass.
2 x 20 in.	14 in.	.19 gals.	12 in.	1 in.	3/8 in.	$12.75	$16.00
2¼ x 20 "	14 "	.24 "	12 "	1 "	3/8 "	14.00	17.25
2½ x 20 "	14 "	.29 "	12 "	1¼ "	3/8 "	14.75	19.00
2¾ x 20 "	14 "	.36 "	12 "	1¼ "	3/8 "	15.50	19.75
3 x 20 "	14 "	.42 "	12 "	1¼ "	3/8 "	16.00	20.50
3¼ x 20 "	14 "	.50 "	12 "	1½ "	3/8 "	17.75	22.75
3½ x 20 "	14 "	.58 "	12 "	1½ "	7-16 "	20.75	27.00
4 x 20 "	14 "	.76 "	12 "	2 "	7-16 "	26.50	34.00

Cipher—**Haupun**, Fig. 1235, Iron.
Henbid, " 1235, Brass-Lined.
Henbifa, " 1235, Brass Body.
Henboc, " 1235, All Brass.

Cipher—**Henbur**, Fig. 1236, Iron.
Henbust, " 1236, Brass-Lined.
Hencab, " 1236, Brass Body.
Hencare, " 1236, All Brass.

In addition always specify Diameter and Length of Cylinder Body.

BOLT ATTACHMENT CYLINDER WITH METAL LOWER VALVE.

FIG. 1268. 10½ INCHES LONG WITH "AA" PLUNGER.

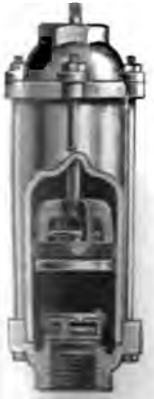


FIG. 1268

Diameter and Length.	Stroke.	Capacity per Stroke.	Size Pipe.	Well Rod.	Iron.	Brass-Lined, Brass Cage and Valve Plunger.	Brass Body. All Brass Plunger.	All Brass.
2½ x 10½ in.	6 in.	.13 gals.	1¼ in.	3/8 in.	$6.10	$9.25	$9.75	$13.50
3 x 10½ "	6 "	.18 "	1¼ "	3/8 "	6.75	10.25	11.00	14.75
3½ x 10½ "	6 "	.25 "	1½ "	7-16 "	9.25	12.25	13.25	18.50
4 x 10½ "	6 "	.32 "	2 "	7-16 "	12.50	15.50	18.00	24.00

FIG. 1268. 12, 16, 18 AND 20 INCHES LONG, WITH "BB" PLUNGER.

Diameter and Length.	Stroke.	Capacity per Stroke.	Size Pipe.	Well Rod.	Iron.	Brass-Lined, Brass Cage and Valve Plunger.	Brass Body, All Brass Plunger.	All Brass.
2½ x 12 in.	7 in.	.15 gals.	1¼ in.	3/8 in.	$7.75	$9.75	$11.00	$14.00
3 x 12 "	7 "	.21 "	1¼ "	3/8 "	8.75	10.75	12.25	15.25
3½ x 12 "	7 "	.29 "	1½ "	7-16 "	11.25	13.00	15.50	19.25
4 x 12 "	7 "	.38 "	2 "	7-16 "	15.00	16.75	20.50	25.00
2½ x 16 "	10 "	.21 "	1¼ "	3/8 "	8.75	11.50	13.00	17.25
3 x 16 "	10 "	.30 "	1¼ "	3/8 "	9.75	12.50	14.00	18.50
3½ x 16 "	10 "	.41 "	1½ "	7-16 "	13.50	15.25	17.75	24.00
4 x 16 "	10 "	.54 "	2 "	7-16 "	18.00	20.00	23.00	30.50
2½ x 18 "	12 "	.26 "	1¼ "	3/8 "	9.25	12.50	14.00	18.25
3 x 18 "	12 "	.37 "	1¼ "	3/8 "	10.25	13.50	15.00	19.50
3½ x 18 "	12 "	.50 "	1½ "	7-16 "	14.75	16.50	19 00	25.25
4 x 18 "	12 "	.65 "	2 "	7-16 "	19.50	21.75	24.75	32.25
2½ x 20 "	14 "	.29 "	1¼ "	3/8 "	....	....	14.75	19.00
3 x 20 "	14 "	.42 "	1¼ "	3/8 "	....	....	18.00	20.50
3½ x 20 "	14 "	.58 "	1½ "	7-16 "	....	....	20.75	27.00
4 x 20 "	14 "	.76 "	2 "	7-16 "	....	....	26.50	34.00

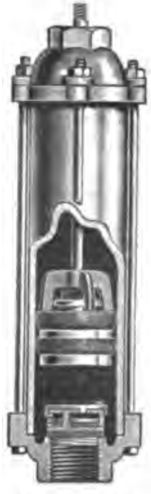


FIG. 1268

Cipher—**Hencil**, Fig. 1268, Iron.
Hencud, " 1268, Brass Lined.

Cipher—**Hencyx**, Fig. 1268, Brass Body.
Hendac, " 1268, All Brass.

In addition always specify Diameter and Length of Cylinder Body.

GOULDS PUMP CYLINDERS OR WORKING BARRELS.

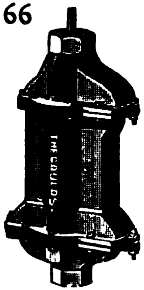


FIG. 621

FIG. 621. DOUBLE-ACTING PUMP CYLINDER. "H" PISTON.

No.	Size.	Stroke.	Capacity per Stroke.	Fitted for	Well Rod.	Iron.		Brass Lined.	
						Cipher.	Price.	Cipher.	Price.
1	2¼ x 10½ in.	6 in.	.10 gal.	1¼ in. pipe	⅝ in.	Quibe	$10.00	Dotesm	$12.50
4	3 x 10½ "	6 "	.18 "	1½ "	⅝ "	Quick	12.00	Doteto	14.75
8	4 x 10½ "	6 "	.32 "	2 "	¾ "	Quid	14.00	Doteux	17.50
8	4 x 14 "	10 "	.54 "	2 "	¾ "	Quiet	20.00	Dotfab	25.00

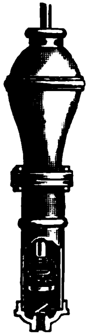


FIG. 559½

FIG. 559½. DEEP WELL PUMP CYLINDER WITH AIR CHAMBER. "AA" PLUNGER.

No.	Size.	Stroke.	Capacity per Stroke.	Fitted for	Well Rod.	Iron.	
						Cipher.	Price.
4	3 x 12 in.	8 in.	.24 gal.	1¼ in. pipe	7-16 in.	Lawn	$9.00
8	4 x 12 "	8 "	.43 "	2 "	½ "	Laxd	11.50

FIG 548. DEEP WELL PUMP CYLINDER WITH AIR CHAMBER. "BB" PLUNGER.

Size.	Stroke.	Capacity per Stroke.	Fitted for	Well Rod.	Iron.		Brass Body.	
					Cipher.	Price.	Cipher.	Price.
2¾ x 16 in.	9 in.	.23 gal.	1¼ in. pipe	7-16 in.	Laper	$11.00	Grujag	$20.00
3 x 16 "	9 "	.27 "	1¼ "	7-16 "	Larde	11.50	Gushwa	20.75
3½ x 16 "	9 "	.37 "	1½ "	7-16 "	Lash	12.50	Halgar	25.75
4 x 16 "	9 "	.49 "	2 "	½ "	Late	14.00	Halgib	30.00

All Brass Air Chamber furnished when so ordered at extra charge.

FIG. 618. BOLTED FLANGE ATTACHMENT CYLINDER.

Size.	Stroke.	Capacity per Stroke.	Fitted For	Well Rod.	Iron.		Brass Body, All Brass Plunger.	
					Cipher.	Price.	Cipher.	Price.
3 x 14 in.	10 in.	.30 gals.	1½ in. pipe	⅜ in.	Gruhfx	$15.00	Gruhge	$28.50
3⅓ x 14 "	10 "	.41 "	2 " "	7-16 "	Hendock	17.00	Henduga	36.00
4 x 14 "	10 "	.54 "	2 " "	7-16 "	Hendodu	21.00	Hendvan	55.00

All Brass Cylinders to order.

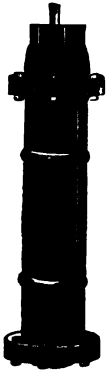


FIG. 618
Flange Attachment.

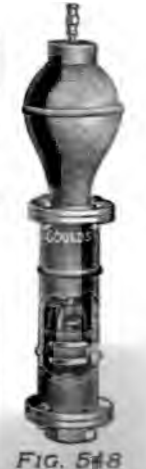


FIG. 548

GOULDS BRASS ARTESIAN WELL CYLINDERS.

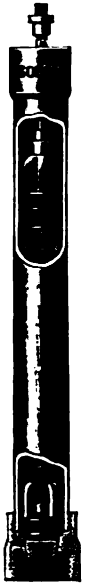


FIG. 1135

With Ball Valves.

Fig. 1135, Goulds Brass Artesian Cylinder or Deep Well Pump, is designed for use in connection with any of our Pump Standards or Differential Working Heads. The shell or body is seamless-drawn brass tubing with cast bronze top and bottom attachments. The plunger and lower valves are bronze balls. The plunger is supplied with cup leather packings. The plunger or lower valves may be inserted or withdrawn through the connecting pipe without removing cylinder.

Wood sucker rods with forged couplings are recommended, as is also the use of valve rod to connect the plunger and sucker rod. Standard threads are on all parts and attachments. This is a very serviceable cylinder for many places where Fig. 904, pages 68 and 69, might prove too expensive.

The demand for a lower-priced cylinder, something durable but not so heavy as our standard pattern (Fig. 904) has led us to design our Fig. 1135½. The body is seamless-drawn brass tubing with cast bronze attachments. The plunger and lower valves are of the spool type, one end being supplied with leather packing. The valves being invertable, make them either metallic or leather-faced, as service requires. The plunger has cup leather packings, and together with lower valve, may be withdrawn from the cylinder without disturbing pipe connections.

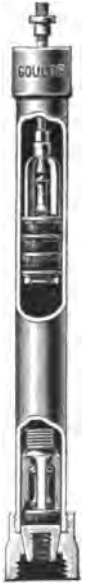


FIG. 1135½

With Spool Valves.

FIGS. 1135 AND 1135½. SIZES, PRICES, ETC.

Inside Diameter.	Stroke.	Capacity per Stroke.	Usual Speed and Capacity per Minute.		Outside Diameter of Caps.	Con. Pipes.	Wood Sucker Rod.	Fig. 1135.	Fig. 1135½.	Price, Either.
								Cipher.	Cipher.	
1¾ in.	10 in.	.104 gal.	35 revs.	3.5 gals.	2¾ in.	2 in.	1 in.	Flewai	Townm	$17.50
1¾ "	16 "	.16 "	30 "	4.8 "	2¾ "	2 "	1 "	Fleweb	Townoc	19.00
2¼ "	10 "	.172 "	35 "	6.02 "	3¼ "	2½ "	1¼ "	Flewend	Townul	26.00
2¼ "	16 "	.275 "	30 "	8.25 "	3¼ "	2½ "	1¼ "	Flewert	Townvy	28.00
2¾ "	10 "	.257 "	35 "	8.99 "	3⅞ "	3 "	1½ "	Flewfar	Townwt	34.00
2¾ "	16 "	.411 "	30 "	12.33 "	3⅞ "	3 "	1½ "	Flewgab	Towobs	36.00
3¼ "	10 "	.36 "	35 "	12.56 "	4⅜ "	3½ "	2 "	Flewgot	Towock	45.00
3¼ "	16 "	.574 "	30 "	17.22 "	4⅜ "	3½ "	2 "	Flickus	Towoda	48.00
3¾ "	10 "	.478 "	35 "	16.73 "	5 "	4 "	2¼ "	Fliclab	Towoef	67.50
3¾ "	16 "	.764 "	30 "	22.92 "	5 "	4 "	2¼ "	Flicilt	Towofl	70.00
4¾ "	10 "	.767 "	35 "	26.84 "	6¼ "	5 "	3 "	Granhod	....	120.00
4¾ "	16 "	1.22 "	30 "	36.81 "	6¼ "	5 "	3 "	Granhug	....	127.50
5¾ "	10 "	1.12 "	35 "	39.20 "	7¼ "	6 "	3½ "	Gratafe	....	172.50
5¾ "	16 "	1.78 "	30 "	53.40 "	7¼ "	6 "	3½ "	Gratibs	....	180.00

When especially ordered we furnish with inside attachments for the smaller connecting pipes.

GOULDS BRASS ARTESIAN DEEP WELL CYLINDER.

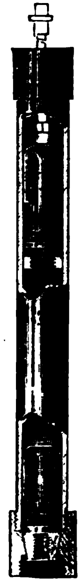


FIG. 904

Fig. 904, Brass Deep Well Pump, is intended for use with our Differential Working Heads, illustrated and described on pages 104 to 113 inclusive. The working barrel or cylinder is seamless drawn brass tubing with cast bronze top and bottom attachments, which are threaded for standard wrought-iron pipe connections. At the bottom a suction pipe and strainer may be attached. The plunger and check are bronze with bronze ball valves. The plunger has cup leather packings. The plunger and lower valve can be inserted or removed through the connecting pipe, which is larger diameter than the bore of cylinder. Wood sucker rods with forged couplings (see page 70) are recommended, as is also the use of valve rod to connect the plunger and sucker rods (see page 70). The valve stems, valve rod, sucker rod couplings and lower end of differential plunger are all made with standard threads.

The price includes the Fig. 904, Deep Well Pump, complete with plunger and check valves. For prices of valve rods, sucker rods and couplings, see page 70.

FIG. 904. SIZES, CAPACITIES, ETC.

Inside Diameter.	Stroke.	Capacity Per Stroke.	Usual Speed and Capacity per Minute.	Dimensions.		Top and Bottom Connecting Pipes.	Square Wood Sucker Rod.	Cipher.	All Brass.
				Length Pump Chamber.	Maximum Outside Diameter Caps.				
1¾ in.	10 in.	.10 gal.	35 revs. 3.5 gals.	26 in.	2⅞ in.	2 in.	1 in.	Gratict	$17.50
1¾ "	16 "	.16 "	30 " 4.8 "	32 "	2⅞ "	2 "	1 "	Whiff	19.00
2¼ "	10 "	.172 "	35 " 6.02 "	26 "	3½ "	2½ "	1¼ "	Dumool	26.00
2¼ "	16 "	.275 "	30 " 8.25 "	32 "	3½ "	2½ "	1¼ "	Whigy	28.00
2¾ "	10 "	.257 "	35 " 8.99 "	26 "	3⅞ "	3 "	1½ "	Dumpuy	34.00
2¾ "	14 "	.359 "	30 " 8.99 "	30 "	3⅞ "	3 "	1½ "	Endmouh	36.00
2¾ "	16 "	.411 "	30 " 12.33 "	32 "	3⅞ "	3 "	1½ "	Whilom	36.00
2¾ "	24 "	.617 "	25 " 15.42 "	40 "	3⅞ "	3 "	1½ "	Whimpe	38.00
2¾ "	30 "	.771 "	20 " 15.42 "	46 "	3⅞ "	3 "	1½ "	Whird	40.00
2¾ "	36 "	.925 "	20 " 18.50 "	52 "	3⅞ "	3 "	1½ "	Gratidi	42.00

GOULDS BRASS ARTESIAN DEEP WELL CYLINDER.

FIG. 904. SIZES, CAPACITIES, ETC. (*Continued.*)

Inside Diameter.	Stroke.	Capacity per Stroke.	Usual Speed and Capacity per Minute.		Dimensions.				Cipher.	All Brass.
					Length Pump Chamber.	Maximum Outside Diameter Caps.	Top and Bottom Connecting Pipes.	Square Wood Sucker Rod.		
3¼ in.	10 in.	.359 gals.	35 revs.	12.56 gals.	30 in.	4½ in.	3½ in.	2 in.	Dumpyb	$45.00
3¼ "	14 "	.503 "	30 "	15. "	34 "	4½ "	3½ "	2 "	Endmove	48.00
3¼ "	16 "	.574 "	30 "	17.22 "	36 "	4½ "	3½ "	2 "	Whim	48.00
3¼ "	24 "	.862 "	25 "	21.55 "	44 "	4½ "	3½ "	2 "	Whine	52.00
3¼ "	30 "	1.077 "	20 "	21.54 "	50 "	4½ "	3½ "	2 "	Whirla	55.00
3¼ "	36 "	1.29 "	20 "	25.80 "	56 "	4½ "	3½ "	2 "	Whoop	58.00
3¾ "	10 "	.478 "	35 "	16.73 "	34 "	5⅛ "	4 "	2¼ "	Dumqeel	67.50
3¾ "	14 "	.669 "	30 "	20. "	38 "	5⅛ "	4 "	2¼ "	Endmuba	70.00
3¾ "	16 "	.764 "	30 "	22.92 "	40 "	5⅛ "	4 "	2¼ "	Zylonik	70.00
3¾ "	24 "	1.14 "	25 "	28.50 "	48 "	5⅛ "	4 "	2¼ "	Whiners	75.00
3¾ "	30 "	1.43 "	20 "	28.60 "	54 "	5⅛ "	4 "	2¼ "	Whisk	80.00
3¾ "	36 "	1.721 "	20 "	34.42 "	60 "	5⅛ "	4 "	2¼ "	Wick	85.00
4¼ "	10 "	.614 "	35 "	21.49 "	34 "	5¾ "	4½ "	2½ "	Dumqued	87.50
4¼ "	14 "	.859 "	30 "	25.7 "	38 "	5¾ "	4½ "	2½ "	Endmud	80.00
4¼ "	16 "	.982 "	30 "	29.46 "	48 "	5¾ "	4½ "	2½ "	Zylonie	00.00
4¼ "	24 "	1.47 "	25 "	36.75 "	48 "	5¾ "	4½ "	2½ "	Whiney	85.00
4¼ "	30 "	1.84 "	20 "	36.80 "	54 "	5¾ "	4½ "	2½ "	Whisto	100.00
4¼ "	36 "	2.211 "	20 "	44.20 "	60 "	5¾ "	4½ "	2½ "	Widen	106.00
4¾ "	10 "	.767 "	35 "	26.84 "	34 "	6¼ "	5 "	3 "	Dumquil	120.00
4¾ "	14 "	1.07 "	30 "	32.1 "	38 "	6¼ "	5 "	3 "	Endmuck	127.50
4¾ "	16 "	1.22 "	30 "	36.81 "	40 "	6¼ "	5 "	3 "	Zylonm	127.50
4¾ "	24 "	1.84 "	25 "	46.02 "	48 "	6¼ "	5 "	3 "	Whippe	135.00
4¾ "	30 "	2.30 "	20 "	46. "	54 "	6¼ "	5 "	3 "	Whita	142.50
4¾ "	36 "	2.76 "	20 "	55.20 "	80 "	6¼ "	5 "	3 "	Wield	156.00
5¾ "	10 "	1.12 "	35 "	39.20 "	34 "	7¼ "	6 "	3½ "	Dubame	172.50
5¾ "	14 "	1.57 "	30 "	47.1 "	36 "	7¼ "	6 "	3½ "	Endnab	180.00
5¾ "	16 "	1.78 "	30 "	53.70 "	40 "	7¼ "	6 "	3½ "	Zylonna	180.00
5¾ "	24 "	2.69 "	25 "	67.25 "	48 "	7¼ "	6 "	3½ "	Dudebl	106.00
5¾ "	30 "	3.372 "	20 "	67.44 "	54 "	7¼ "	6 "	3½ "	Whiz	207.50
5¾ "	36 "	4.014 "	20 "	80.28 "	60 "	7¼ "	6 "	3½ "	Wight	217.50
6¾ "	16 "	2.479 "	30 "	74.37 "	40 "	8¼ "	7 "	4 "	Grallow	280.00
6¾ "	24 "	3.716 "	25 "	92.9 "	46 "	8¼ "	7 "	4 "	Grallia	300.00
6¾ "	30 "	4.646 "	20 "	92.92 "	54 "	8¼ "	7 "	4 "	Graligu	320.00
6¾ "	36 "	5.576 "	20 "	111.52 "	60 "	8¼ "	7 "	4 "	Grallina	325.00
7¾ "	16 "	3.26 "	30 "	97.80 "	40 "	9½ "	8 "	5 "	Zylonec	425.00
7¾ "	24 "	4.9 "	25 "	122.50 "	48 "	9½ "	8 "	5 "	Willri	450.00
7¾ "	30 "	6.126 "	20 "	122.52 "	54 "	9½ "	8 "	5 "	Dubai	480.00
7¾ "	36 "	7.34 "	20 "	146.80 "	[illegible] "	9½ "	8 "	5 "	Willga	500.00
8¾ "	16 "	4.164 "	30 "	124.92	[illegible]	11 "	9 "	5½ "	Grallje	685.00
8¾ "	24 "	6.247 "	25 "	156.1	[illegible]	11 "	9 "	5½ "	Groomug	725.00
8¾ "	30 "	7.809 "	20 "	156.	[illegible]	11 "	9 "	5½ "	Groomva	775.00
8¾ "	36 "	9.37 "	20 "	187.	[illegible]	11 "	9 "	5½ "	Groomwe	825.00
9½ "	24 "	7.34 "	25 "	183.	[illegible]	12 "	10 "	6 "	Mamxat	915.00
9½ "	30 "	9.18 "	20 "	183.	[illegible]	12 "	10 "	6 "	Mamma	965.00
9½ "	36 "	11.02 "	20 "	220.	[illegible]	12 "	16 "	6 "	Mamez	1,000.00
11½ "	24 "	10.77 "	25 "	269.	[illegible]	14 "	12 "	7¼ "	Mamvid	1,156.00
11½ "	30 "	13.47 "	20 "	269.	[illegible]	14 "	12 "	7¼ "	Mamvae	1,200.00
11½ "	36 "	16.16 "	20 "	323.2	[illegible]	4 "	12 "	7¼ "	Mamut	1,250.00

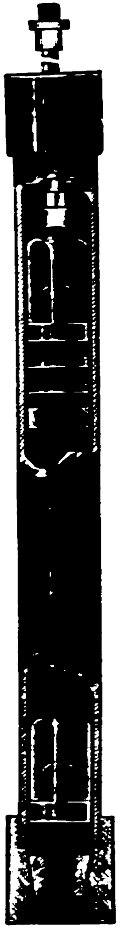


FIG. 904

VALVE RODS, SUCKER RODS AND COUPLINGS.

GOULDS CONNECTING PARTS FOR SINGLE-ACTING DEEP WELL PUMPS.

Fig. 76, Valve Rod, is a forged wrought-iron piece used to connect the deep well plunger and the sucker rod. It is comparatively much less in cross-section than the wood sucker rod, and of a length sufficient to prevent the sucker rod from entering the top end of Pump cylinder and thereby restricting the flow of water. There is a price list below. It includes all the sizes required by the deep well Pump cylinders described on the preceding pages.

Fig. 68, Sucker Rod Couplings, are of forged wrought-iron, complete and ready to be attached to sucker rods. The price list includes all the sizes used with the deep well pumping apparatus described on the preceding pages.

Fig. 77, Wood Sucker Rods, are made of the best white ash. The prices include all necessary couplings attached.

SQUARE WOOD SUCKER RODS, COUPLINGS AND VALVE RODS.

SIZES, PRICES, ETC.

Size Square Wood Sucker Rods.	Couplings, Valve Rods, etc., have Connecting Threads.	Inside Diameter of Deep Well Pump.	Sucker Rod and Coupling, Fig. 77.		Coupling, Fig. 68.		Valve Rod, Fig. 76.	
			Cipher.	Price per Foot.	Cipher.	Price per Pair.	Cipher.	Price Each.
1 in.	⅝ in. pin	1¾ in.	Eobamt	$0.12½	Eobase	$1.00	Eobats	$2.50
1¼ "	⅝ "	2¼ "	Easkoty	.15	Easimel	1.25	Easjos	3.00
1½ "	⅞ "	2¾ "	Easkub	.20	Easinab	1.50	Easjote	3.75
2 "	1 "	3¼ "	Easkyd	.25	Easinig	2.50	Easjots	4.75
2¼ "	1⅛ "	3¾ "	Easlaa	.40	Easinot	3.75	Easkad	5.25
2½ "	1¼ "	4¼ "	Easlact	.50	Easinul	5.00	Easkite	6.00
3 "	1⅜ "	4¾ "	Easlib	.65	Easinyx	6.25	Easkog	6.75
3½ "	1½ "	5¾ "	Easligs	.90	Easjab	8.75	Easkome	7.50
5 "	2 "	7¾ "	Easlija	1.25	Easjik	12.50	Easkost	15.00

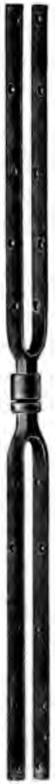


FIG. 68

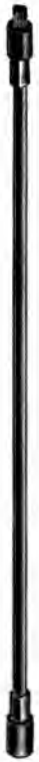
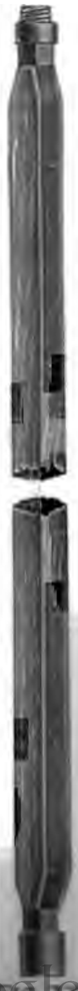


FIG. 76



FIG

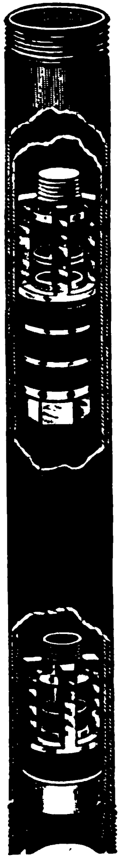


FIG 1164

GOULDS BRASS TUBULAR WELL CYLINDERS.

TO BE ANCHORED IN PIPE AFTER WELL IS LINED.

The construction of Fig. 1164, Brass Working Barrel or Cylinder, is plainly shown in sectional engraving. It has brass body, check and plunger, with rubber valve discs and is of special service in small bore wells or where a larger cylinder is required than well lining will admit in Artesian Cylinder of the type of Figs. 904, 1135, etc. Fig. 691 is for same purpose as Fig. 1164. It has four leather plunger and bronze ball valves.

FIGS. 1164 AND 691. SIZES, PRICES, ETC.

Size of Well.	Inside Diam. of Cyl.	Length Stroke.	Length Barrel.	Capacity per Stroke.	Usual Speed and Capacity per Minute.		Square Wood Sucker Rod.	Fig. 1164. With 3 Leather Plunger and Spool Poppet Valves.		Fig. 691. With 4 Leather Plunger and Bronze Ball Valves.	
								Cipher.	Price.	Cipher.	Price.
3½ in.	3 in.	10 in.	28 in.	.306 gals.	35 revs.	10.71 gals.	2 in.	Panike	$19.50	Peopic	$29.00
	3 "	14 "	32 "	.428 "	30 "	12.84 "	2 "	Pawnat	20.50	Peopod	30.00
	3 "	16 "	34 "	.489 "	30 "	14.67 "	2 "	Pawned	21.50	Peopug	31.00
	3 "	24 "	42 "	.734 "	25 "	18.35 "	2 "	Pawnis	24.00	Peopwo	33.00
4 "	3½ "	10 "	28 "	.416 "	35 "	14.56 "	2¼ "	Tintis	25.00	Peopxu	39.00
	3½ "	14 "	32 "	.583 "	30 "	17.49 "	2¼ "	Pawnoc	26.50	Peoqua	40.50
	3½ "	16 "	34 "	.666 "	30 "	19.98 "	2¼ "	Tintom	27.00	Peoqvit	41.00
	3½ "	24 "	42 "	.999 "	25 "	24.97 "	2¼ "	Tintug	29.00	Peorac	43.00
4½ "	4 "	10 "	34 "	.544 "	35 "	19.04 "	2½ "	Pawnut	32.00	Peruson	48.00
	4 "	14 "	38 "	.761 "	30 "	22.83 "	2½ "	Pawnyx	33.50	Perusud	49.50
	4 "	16 "	40 "	.87 "	30 "	26.10 "	2½ "	Peoola	34.00	Peruta	50.00
	4 "	24 "	48 "	1.30 "	25 "	32.50 "	2½ "	Peopa	35.50	Perutem	51.50
5 "	4½ "	10 "	34 "	.688 "	35 "	24.08 "	3 "	Tintvi	44.00	Perutis	64.50
	4½ "	14 "	38 "	.963 "	30 "	28.89 "	3 "	Peopel	46.00	Perutiv	66.50
	4½ "	16 "	40 "	1.10 "	30 "	33.00 "	3 "	Tintwy	47.00	Perutop	67.50
	4½ "	24 "	48 "	1.65 "	25 "	41.25 "	3 "	Tinuac	50.00	Perutug	70.50
6 "	5½ "	10 "	38 "	1.02 "	35 "	35.70 "	3½ "	....	....	Perutvn	82.00
	5½ "	14 "	42 "	1.44 "	30 "	43.20 "	3½ "	....	....	Pervac	85.00
	5½ "	16 "	44 "	1.64 "	30 "	49.20 "	3½ "	....	....	Perves	87.00
	5½ "	24 "	52 "	2.46 "	25 "	61.50 "	3½ "	....	....	Pervidy	92.00
7 "	6½ "	10 "	42 "	1.43 "	35 "	50.05 "	4 "	....	....	Pervifs	123.00
	6½ "	14 "	46 "	2.01 "	30 "	60.30 "	4 "	....	....	Pervoda	127.00
	6½ "	16 "	48 "	2.29 "	30 "	68.70 "	4 "	....	....	Pervoco	129.00
	6½ "	24 "	56 "	3.44 "	25 "	86 "	4 "	....	....	Pokist	136.00
8 "	7 7/16 "	10 "	44 "	1.88 "	35 "	65.80 "	5 "	....	....	Pokita	198.00
	7 7/16 "	14 "	48 "	2.63 "	30 "	78.90 "	5 "	....	....	Pokjid	202.00
	7 7/16 "	16 "	50 "	3. "	30 "	90 "	5 "	....	....	Pokjifs	204.00
	7 7/16 "	24 "	58 "	4.51 "	25 "	112.75 "	5 "	....	....	Pokjigo	212.00

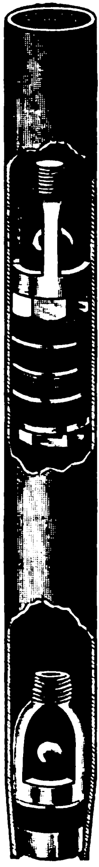


FIG. 691

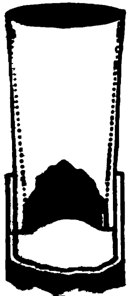


FIG. 692.

GUM PACKERS, WITH BRASS ATTACHED.

FOR LOWERING AND SEATING WORKING BARREL IN WELL.

The usual gum packer (to which suction strainer may be attached) anchors cylinder in place in pipe. Where wells are not lined to bottom, or for any reason it is desired to attach suction pipe below cylinder, this pipe should be extended to rest on bottom of well.

FIG. 692. SIZES AND PRICES.

Diameter Well Casing.	Price.
2 in.	$1.15
2½ "	1.60
3 "	2.10
3½ "	2.95
4 "	3.40
4½ "	4.75
5 "	5.25
6 "	6.15
7 "	8.70
8 "	11.40

GOULDS CHECK AND FOOT VALVES, STRAINERS, ETC.

CHECK VALVES.

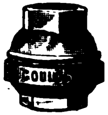


FIG. 667

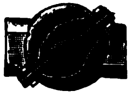


FIG. 742

Size, Inches....	¾	1	1¼	1½	2	2½	8	8½	4	4½	5	6
Fig. 667, Plain.	$1.50	$1.75	$2.00	$2.50	$3.00	$4.25	$6.00	....	....	....	....	....
Galv..	2.00	2.25	2.75	3.50	4.50	6.00	10.00	....	....	....	....	....
Fig. 742, Plain.	1.00	1.25	1.50	2.00	2.75	6.00	7.50	$10.00	$12.00	....	....	....
Galv..	1.50	1.75	2.25	3.00	4.00	9.50	12.00	15.00	17.50	....	....	....
Fig. 476........	....	....	....	....	....	....	....	....	8.75	$10.50	$12.75	$16.00

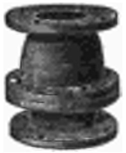


FIG. 476

FOOT VALVES AND STRAINERS.

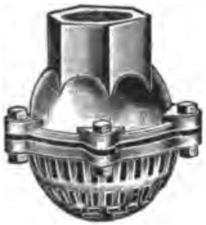


FIG. 760, 2½" AND UP

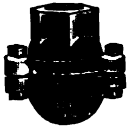


FIG. 760, ¾ TO 2"

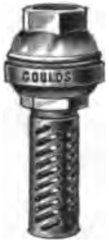


FIG. 471

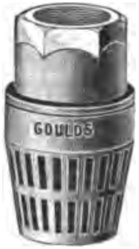


FIG. 1259

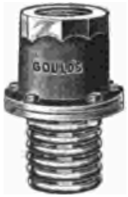


FIG. 473

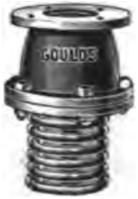


FIG. 475

Size Inches..................	¾	1	1¼	1½	2	2½	8	8½	4	4½	5	6	8	10	12
Fig. 760, Plain..................	$0.42	$0.42	$0.48	$0.62	$0.82	$1.20	$1.70	$2.50	$2.75	....	$4.25	$7.00	$16.00	$30.00	$60.00
Galv........	.60	.60	.75	1.00	1.45	2.00	2.70	3.90	4.25	....	6.50	10.00	30.00	50.00	90.00
Fig. 471, Plain..................	1.75	2.00	2.25	2.50	3.00	3.50	4.50	....	....	....	....	....	....	....	....
Galv......	2.50	2.75	3.00	3.50	4.50	5.50	7.00	....	....	....	....	....	....	....	....
Fig. 1259, Plain..................	....	....	2.25	2.50	3.00	....	....	....	....	....	....	....	....	....	....
Galv......	....	....	3.00	3.50	4.50	....	....	....	....	....	....	....	....	....	....
Fig. 473........	....	....	....	....	....	4.75	5.75	7.00	8.50	$10.00	....	....	....	....	....
Fig. 475........	....	....	....	....	....	....	....	....	8.50	10.00	12.00	$15.00	....	....	....

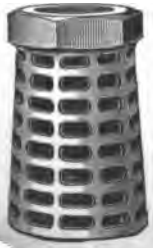


FIG. 826

STRAINERS.

Size, Inches..........	1½	2	2½	3	8½	4	5	6
Fig. 826, Plain........	....	....	$0.80	$1.05	$1.70	$1.90	$2.40	$3.40
Galv........	....	....	1.10	1.60	2.60	2.90	3.80	5.00
Fig. 1232, Plain.......	$1.25	$1.50	2.00	2.75	....	....	....	....
Galv.......	1.75	2.25	3.00	4.00	....	....	....	....

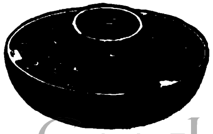


FIG. 1[illegible]

GOULDS SUCTION STRAINERS.

SIZES AND PRICES.

Size, Inches	1	1¼	1½	2
Fig. 658, Plain, Without Brass Gauze, Each	$0.18	$0.20	$0.24	$0.36
Galvanized, Without Brass Gauze, Each	.22	.24	.26	.40
Galvanized, With Brass Gauze, Each	.28	.32	.36	.50
Fig. 659, Plain, Without Brass Gauze, Each	.18	.20	.24	.36
Galvanized, Without Brass Gauze, Each	.22	.24	.26	.40
Galvanized, With Brass Gauze, Each	.28	.32	.36	.50
Fig. 660, Plain, Without Brass Gauze, Each	.18	.20	.24	.36
Galvanized, Without Brass Gauze, Each	.22	.24	.26	.40
Galvanized, With Brass Gauze, Each	.28	.32	.36	.50

Set Screw.

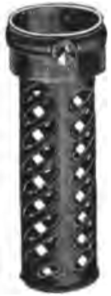


FIG. 658

Female Thread.

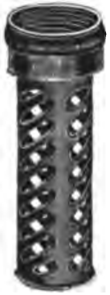


FIG. 659

Male Thread.

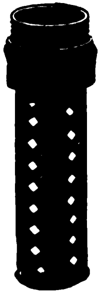


FIG. 660

GOULDS WATER WORKS STRAINERS.

These Strainers are made of heavy pipe, galvanized after the holes are put in, and covered with heavy woven wire cloth.

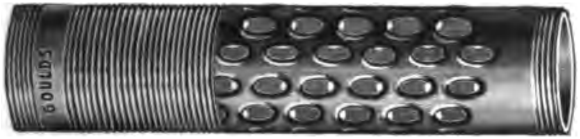


FIG. 141½

Size.	No. Holes per foot.	No. Square Inches of Filtering Surface per Square Foot.	List Price per Foot.
2 in.	108	51	$2.00
2½ "	132	62	3.00
3 "	156	74	4.00
3½ "	168	79	4.50
4 "	192	126	5.00
4½ "	216	142	5.50
5 "	240	158	6.00
6 "	288	189	7.50
8 "	336	220	10.00
9 "	370	240	12.00
10 "	408	268	15.00

COOKS SEAMLESS BRASS SLOTTED STRAINER.

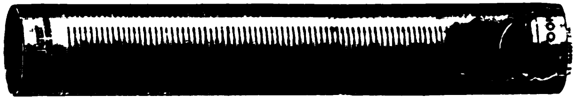


FIG. 1279. SIZES, PRICES, ETC.

Inside Diameter of Well, Inches	2	2½	3	3½	4	4½	5	6	7	8
Length in Feet for Coarse Sand	4	6	6	6	8	8	8	8	10	10
Length in Feet for Fine Sand	8	10	12	12	14	16	16	16	16	16
Price per Foot	$2.50	$3.00	$4.00	$4.50	$5.00	$5.75	$6.25	$8.00	$10.00	$12.00

GOULDS "EUREKA" TUBULAR WELL CYLINDERS.

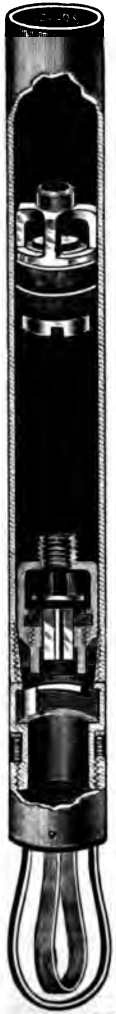


FIG. 142

With Poppet Valves.

Fig. 142 represents Goulds "Eureka" Seamless Brass Tubular Well Cylinder. It can be used in rough pipe after the well is made, using the Seating Tool attached to drill rod to crowd it down to its place, and then to expand the rubber ring to hold firmly in place. Spring dog coupling prevents cylinder from turning.

FIG. 142. SIZES, PRICES, ETC. COMPLETE WITH VALVES AND SPRING DOG COUPLING.

Size of Well.	Inside Diameter.	Stroke.	Price of Cylinder Complete With 2 Leather Plunger.	Price of Cylinder Complete, With 4 Leather Plunger and Bronze Ball Valves.	Size of Well.	Inside Diameter.	Stroke.	Price of Cylinder Complete With 2 Leather Plunger.	Price of Cylinder Complete With 4 Leather Plunger and Bronze Ball Valves.
2 in.	1 13/16 in.	12 in.	$6.40	$9.00	4 in.	3½ in.	24 in.	$42.00	$71.00
2 "	1 13/16 "	16 "	7.60	10.00	4½ "	4 "	16 "	50.00	82.00
2½ "	2¼ "	12 "	11.00	18.00	4½ "	4 "	24 "	58 00	90.00
2½ "	2¼ "	16 "	12.50	21.00	5 "	4½ "	24 "	60.00	120.00
3 "	2¾ "	12 "	15.00	25.00	5 "	4½ "	36 "	80.00	140.00
3 "	2¾ "	16 "	17.00	27.00	6 "	5½ "	24 "	112.00	180.00
3½ "	3 "	12 "	30.00	46 00	6 "	5½ "	36 "	136.00	208.00
3½ "	3 "	16 "	33.00	49 00	8 "	7 7/16 "	36 "	360.00	520.00
4 "	3½ "	12 "	33.00	62.00	8 "	7 7/16 "	42 "	400.00	600.00
4 "	3½ "	16 "	36.00	65.00					

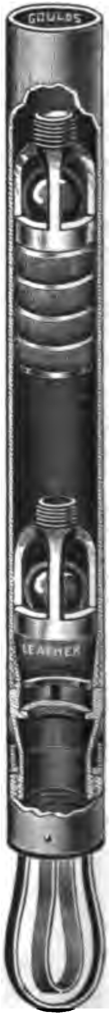


FIG. 142

With Ball Valves.

SEATING TOOL "EUREKA" CYLINDER.

FIG. 143½. SIZES AND PRICES

For 2 Inch Cylinder........	Each, $0.60
" 2½ " "	" .90
" 3 " "	" 1.20
" 4 " "	" 2.40
" 5 " "	" 4.00

GOULDS TUBULAR WELL CYLINDERS.

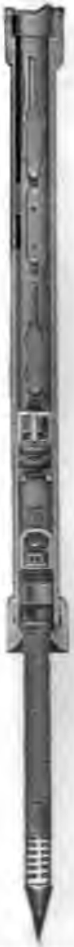


FIG. 728

Fig. 728 illustrates our polished iron Tubular Well Cylinder, made from extra heavy pipe, bored out, *fitted with driving shoe.*

FIG. 728. SIZES, PRICES.

Diameter.	WITHOUT VALVES.				WITH THREE-FOOT WELL POINT, TWO LEATHER VALVES AND COUPLING.			
	3 FEET.		4 FEET.		3 FEET.		4 FEET.	
	Black.	Galv'd.	Black.	Galv'd.	Black.	Galv'd.	Black.	Galv'd.
2 in.	$4.00	$4.50	$5.00	$5.75	$8.50	$9.00	$9.50	$10.00
2½ "	6.65	7.50	8.50	9.25	16.50	17.00	18.50	19.00
3 "	9.00	10.00	11.50	12.25	22.50	23.50	25.00	26.00
4 "	14.00	15.75	17.50	20.00	41.00	43.00	45.00	48.00

Fig. 144, Brass Lined Cylinder, is made similar to Fig. 728, the shell being bored out to insert a lining of brass tubing. The lining is forced in and swedged in position.

FIG. 144. SIZES, PRICES.

Diameter.	Length.	Without Points or Valves, but with Shoe.	With Shoe, 3-ft. "Perfect" Well Point, Four Leather Valves and Coupling.
2 in.	3 ft.	$7.75	$12.25
2½ "	3 "	10.50	18.00
3 "	3 "	13.00	26.00
4 "	3 "	19.00	41.50

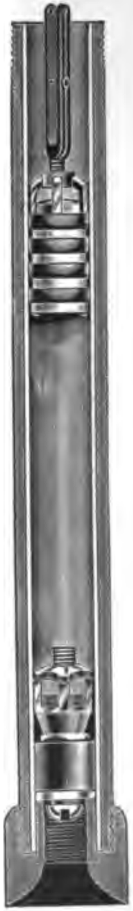


FIG. 144

GOULDS IRON AND WOOD ROD COUPLINGS.

COUPLINGS FOR IRON RODS.

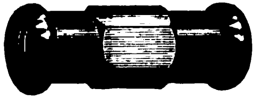


FIG. 232 SIZES AND PRICES.

Size Rods.	Threads to the Inch.	Galvanized. Per lb.	Plain. Per lb.	Brass. Per lb.
3/8 in.	14, regular.	$0.20	$0.16	$0.50
3/8 "	16. to order.	.20	.16	.50
3/8 x 7/16 "	12 x 14	.20	.16	.50
7/16 "	12	.20	.16	.50
1/2 "	12	.20	.16	.50
5/8 "	11	.20	.16	.50
3/4 "	10	.20	.16	.50

HEXAGON COUPLINGS FOR IRON RODS.

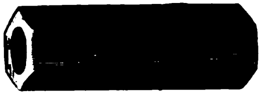


FIG. 233½. SIZES AND PRICES

Size Rods.	Threads to the Inch.	Galvanized. Per lb.	Plain. Per lb.	Brass. Per lb.
3/8 in.	14, regular.	$0.20	$0.16	$0.50
3/8 "	16, to order.	.20	.16	.50
3/8 x 7/16 "	12 x 14	.20	.16	.50
7/16 "	12	.20	.16	.50
1/2 "	12	.20	.16	.50

PIPE ROD COUPLINGS,

FOR ⅜-INCH PIPE.

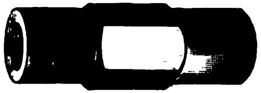


FIG. 232½

	Galvanized. Per lb.	Plain. Per lb.
Pipe Thread...............	$0.22	$0.18

REDUCER COUPLING,

FOR ½ AND ¾-INCH PIPE AND STEEL PUMP RODS.

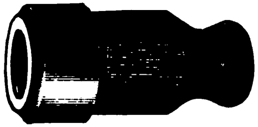
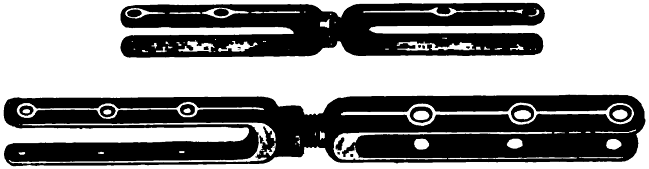


FIG. 234½

Size Rods.	Galvanized. Per lb.	Plain. Per lb.
3/8 in.	$0.30	$0.25
7/16 "	.30	.25
3/8 "	.30	.25
7/16 "	.30	.25

WOOD ROD COUPLINGS, FIG. 9.



For 1 and 1⅛-in. Rod, plain, 2 hole, per pair,	$0.10
" 1 " 1⅛ " " galv., 2 " "	.14
" 1 " 1⅛ " " plain, 3 " "	.16
" 1 " 1⅛ " " galv., 3 " "	.20
" 1¼ " 1⅜ " " plain, 3 " "	.20
" 1¼ " 1⅜ " " galv., 3 " "	.24

GOULDS BRASS JACKET DRIVE WELL POINT.

FIG. 524. SIZES, PRICES, ETC.

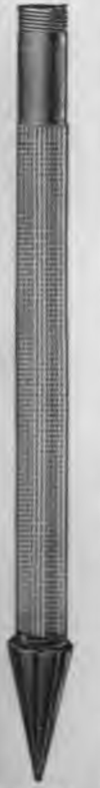
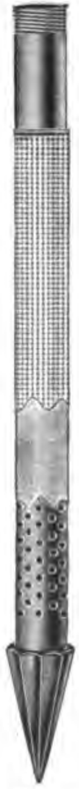


FIG. 524

Trade No.	Diameter Pipe.	Length of Pipe.	Length of Jacket.	No. of Holes.	No. 60 Gauze, per Dozen.	No. 70 Gauze, per Dozen.	No. 80 Gauze, per Dozen.	No. 90 Gauze, per Dozen.	No. 100 Gauze, per Dozen.
74	1 in.	24 in.	18 in.	72	$33.00	$40.00	$46.00	$52.00	$62.00
76	1 "	30 "	24 "	96	42.00	49.00	56.00	64.00	78.00
78	1 "	36 "	30 "	120	51.00	59.00	66.00	76.00	94.00
80	1 "	42 "	36 "	144	60.00	68.00	76.00	88.00	120.00
82	1 "	48 "	42 "	168	69.00	78.00	86.00	100.00	136.00
84	1 "	54 "	48 "	197	78.00	87.00	96.00	112.00	152.00
86	1¼ "	20 "	14 "	80	30.00	36.00	42.00	50.00	64.00
90	1¼ "	24 "	18 "	100	36.00	44.00	52.00	60.00	80.00
94	1¼ "	30 "	24 "	130	46.00	55.00	64.00	75.00	100.00
98	1¼ "	36 "	30 "	165	56.00	66.00	76.00	90.00	120.00
100	1¼ "	42 "	36 "	200	66.00	77.00	88.00	105.00	140.00
102	1¼ "	48 "	42 "	270	76.00	88.00	100.00	120.00	160.00
106	1¼ "	54 "	48 "	260	86.00	99.00	112.00	135.00	180.00
110	1¼ "	60 "	54 "	290	96.00	110.00	124.00	150.00	200.00
112	1¼ "	66 "	60 "	320	106.00	121.00	136.00	165.00	220.00
114	1¼ "	72 "	66 "	350	116.00	132.00	148.00	180.00	240.00
136	1½ "	24 "	18 "	120	48.00	57.00	65.00	78.00	94.00
140	1½ "	30 "	24 "	162	60.00	70.00	80.00	96.00	118.00
144	1½ "	36 "	30 "	198	72.00	84.00	95.00	114.00	142.00
146	1½ "	42 "	36 "	240	84.00	97.00	110.00	132.00	166.00
148	1½ "	48 "	42 "	276	96.00	111.00	125.00	150.00	188.00
150	1½ "	54 "	48 "	312	108.00	124.00	140.00	168.00	204.00
152	1½ "	60 "	54 "	348	120.00	138.00	155.00	186.00	228.00
154	1½ "	66 "	60 "	384	132.00	151.00	170.00	204.00	252.00
156	1½ "	72 "	66 "	420	144.00	165.00	185.00	222.00	276.00
160	2 "	24 "	18 "	144	75.00	85.00	94.00	110.00	130.00
164	2 "	30 "	24 "	208	90.00	101.00	112.00	132.00	160.00
168	2 "	36 "	30 "	264	105.00	118.00	130.00	154.00	190.00
170	2 "	42 "	36 "	288	120.00	134.00	148.00	176.00	220.00
172	2 "	48 "	42 "	336	135.00	151.00	166.00	198.00	250.00
174	2 "	54 "	48 "	384	150.00	167.00	184.00	220.00	280.00
176	2 "	60 "	54 "	432	165.00	184.00	202.00	242.00	310.00
178	2 "	66 "	60 "	480	180.00	200.00	220.00	264.00	340.00
180	2 "	72 "	66 "	528	195.00	217.00	238.00	286.00	370.00
184	2½ "	36 "	30 "	300	180.00	205.00	230.00	260.00	300.00
188	2½ "	48 "	42 "	360	230.00	265.00	300.00	340.00	400.00
192	2½ "	60 "	54 "	420	280.00	325.00	370.00	420.00	500.00
196	2½ "	72 "	66 "	480	330.00	385.00	440.00	500.00	600.00
200	3 "	36 "	30 "	300	240.00	275.00	310.00	340.00	410.00
204	3 "	48 "	42 "	420	300.00	345.00	390.00	430.00	520.00
208	3 "	60 "	54 "	540	360.00	415.00	470.00	520.00	630.00
212	3 "	72 "	66 "	660	420.00	485.00	550.00	610.00	740.00
216	4 "	48 "	36 "	360	480.00	520.00	560.00	600.00	700.00
220	4 "	72 "	60 "	600	630.00	695.00	760.00	840.00	1,000.00
224	4 "	96 "	84 "	840	780.00	870.00	960.00	1,080.00	1,300.00
228	4 "	120 "	108 "	1,080	930.00	1,045.00	1,160.00	1,320.00	1,600.00



Constructive View.

GOULDS FLUSH OR TUBULAR WELL POINTS.

FIG. 662. SIZES, PRICES, ETC.

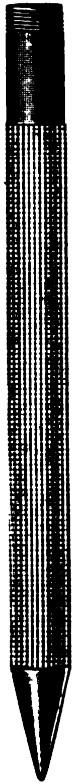


FIG. 662

Trade No.	Dia. Pipe.	Length of Pipe.	Length of Jacket.	No. of Holes.	No. 60 Gauze, per Dozen.	No. 70 Gauze, per Dozen.	No. 80 Gauze, per Dozen.	No. 90 Gauze, per Dozen.	No. 100 Gauze, per Dozen.
73	1 in.	30 in.	18 in.	72	$34.00	$40.00	$45.00	$50.00	$55.00
75	1 "	36 "	18 "	72	38.00	44.00	50.00	56.00	66.00
75½	1 "	36 "	24 "	96	43.00	49.00	55.00	62.00	77.00
77	1 "	42 "	24 "	96	47.00	54.00	60.00	68.00	82.00
77½	1 "	42 "	30 "	120	52.00	59.00	65.00	74.00	93.00
79	1 "	48 "	30 "	120	56.00	63.00	70.00	80.00	98.00
79½	1 "	48 "	36 "	144	61.00	68.00	75.00	86.00	109.00
81	1 "	54 "	36 "	144	65.00	73.00	80.00	92.00	114.00
81½	1 "	54 "	42 "	144	70.00	78.00	85.00	98.00	125.00
83	1 "	60 "	42 "	168	74.00	82.00	90.00	104.00	130.00
116	1¼ "	24 "	18 "	100	36.00	44.00	52.00	60.00	80.00
117	1¼ "	30 "	18 "	100	41.00	49.00	57.00	65.00	85.00
117½	1¼ "	30 "	24 "	130	46.00	55.00	64.00	75.00	100.00
118	1¼ "	36 "	24 "	130	51.00	60.00	68.00	80.00	105.00
119	1¼ "	42 "	24 "	130	56.00	65.00	73.00	85.00	110.00
120	1¼ "	48 "	24 "	130	61.00	70.00	78.00	90.00	115.00
121	1¼ "	36 "	30 "	165	56.00	66.00	76.00	90.00	120.00
122	1¼ "	42 "	30 "	165	61.00	71.00	80.00	95.00	125.00
123	1¼ "	48 "	30 "	165	66.00	76.00	85.00	100.00	130.00
124	1¼ "	54 "	30 "	165	71.00	81.00	91.00	105.00	135.00
125	1¼ "	42 "	36 "	200	66.00	77.00	88.00	105.00	140.00
126	1¼ "	48 "	36 "	200	71.00	82.00	92.00	110.00	145.00
127	1¼ "	54 "	36 "	200	76.00	87.00	97.00	115.00	150.00
128	1¼ "	60 "	36 "	200	81.00	92.00	102.00	120.00	155.00
129	1¼ "	48 "	42 "	230	76.00	87.00	97.00	115.00	150.00
130	1¼ "	54 "	42 "	230	81.00	92.00	104.00	125.00	165.00
130½	1¼ "	60 "	42 "	230	86.00	98.00	110.00	130.00	170.00
131	1¼ "	66 "	42 "	230	91.00	103.00	115.00	135.00	175.00
132	1¼ "	60 "	48 "	260	91.00	104.00	116.00	140.00	180.00
133	1¼ "	66 "	48 "	260	96.00	109.00	122.00	145.00	185.00
135	1¼ "	72 "	48 "	260	101.00	114.00	127.00	150.00	190.00
137	1¼ "	54 "	48 "	260	86.00	98.00	110.00	130.00	170.00
143	1¼ "	60 "	54 "	280	96.00	109.00	122.00	145.00	185.00
149	1¼ "	66 "	60 "	300	106.00	119.00	132.00	155.00	195.00
151	1¼ "	72 "	66 "	320	116.00	129.00	142.00	165.00	205.00

OPEN END OR WELL POINT EXTENSIONS.

FIG. 524½. SIZES, PRICES, ETC.

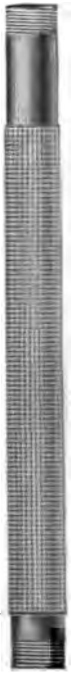


FIG. 524½

Trade No.	Dia. Pipe.	Length of Pipe.	Length of Jacket.	No. of Holes.	No. 60 Gauze, per Dozen.	No. 70 Gauze, per Dozen.	No. 80 Gauze, per Dozen.	No. 90 Gauze, per Dozen.	No. 100 Gauze, per Dozen.
95	1¼ in.	30 in.	24 in.	126	$46.00	$55.00	$64.00	$75.00	$100.00
99	1¼ "	36 "	30 "	165	56.00	66.00	76.00	90.00	120.00
101	1¼ "	42 "	36 "	200	66.00	77.00	88.00	105.00	140.00
145	1½ "	36 "	30 "	198	72.00	84.00	95.00	114.00	142.00
147	1½ "	42 "	36 "	240	84.00.	97.00	110.00	132.00	166.00
169	2 "	36 "	30 "	250	105.00	118.00	130.00	154.00	190.00
171	2 "	42 "	36 "	288	120.00	134.00	148.00	176.00	220.00
173	2 "	48 "	42 "	300	135.00	151.00	166.00	198.00	250.00

Can furnish any size at list of Fig. 524, page 77.

GOULDS WASHER DRIVE WELL POINTS.

These points are made of Galvanized Iron Pipe, bored and countersunk. Each hole is covered with gauze, held in its place by a brass washer expanded to fill the hole.

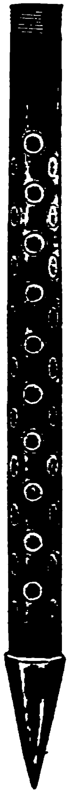


FIG. 661

FIG. 661. SIZES, PRICES, ETC.

Trade No.	Diameter Pipe.	Length of Pipe.	No. of Holes.	No. 60 Gauze, per Dozen.	No. 70 Gauze, per Dozen.	No. 80 Gauze, per Dozen.	No. 90 Gauze, per Dozen.	No. 100 Gauze, per Dozen.
300	1¼ in.	20 in.	50	$30.00	$36.00	$42.00	$50.00	$64.00
301	1¼ "	2 ft.	60	36.00	44.00	52.00	60.00	80.00
302	1¼ "	2½ "	80	46.00	55.00	64.00	75.00	100.00
303	1¼ "	3 "	100	56.00	66.00	76.00	90.00	120.00
304	1¼ "	3½ "	120	66.00	77.00	88.00	105.00	140.00
305	1¼ "	4 "	140	76.00	88.00	100.00	120.00	160.00
320	1½ "	2 "	80	48.00	57.00	65.00	78.00	94.00
321	1½ "	2½ "	110	60.00	70.00	80.00	96.00	118.00
322	1½ "	3 "	130	72.00	84.00	95.00	114.00	142.00
323	1½ "	3½ "	150	84.00	97.00	110.00	132.00	160.00
324	2 "	2½ "	140	90.00	101.00	112.00	132.00	160.00
325	2 "	3 "	170	105.00	118.00	130.00	154.00	190.00
326	2 "	3½ "	220	120.00	134.00	148.00	176.00	220.00

Can furnish any size. Fig. 661 is at list of Fig. 524, page 77.

WELL POINTS FOR WATER WORKS.

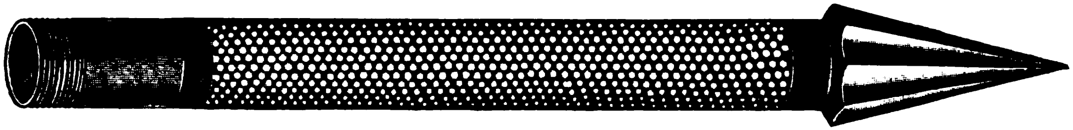


FIG. 141

These prices are for Points, open end, or with plugs, as ordered, and are covered with the different mesh gauzes indicated, also with brass jacket.

FIG. 141. SIZES, PRICES, ETC.

Diameter Pipe, Black or Galvanized.	No. 60 Gauze, per Foot.	No. 70 Gauze, per Foot.	No. 80 Gauze, per Foot.	No. 90 Gauze, per Foot.	No. 100 Gauze, per Foot.
5 in.	$5.00	$5.75	$6.50	$7.25	$8.00
6 "	5.80	6.50	7.25	8.00	9.00
7 "	7.00	7.75	8.50	9.25	10.50
8 "	8.50	9.25	10.00	11.00	12.00
10 "	13.00	14.00	15.25	16.50	18.00

For list on 4-inch or smaller, see Brass Jacket Points.

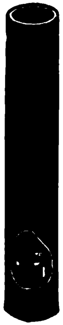


FIG. 33

BRASS SAND BUCKET OR PUMP.

FIG. 33. PRICE LIST.

Fitted for ½ in. gas pipe, for 1¼ in. Drive Well Point, . .	$3.00
Fitted for ½ in. gas pipe, for 1½ in. Drive Well Point, . .	3.50

PRICES FOR FIGS. 13, 15 AND 32.

2 inch	$6.00
2½ "	6.50
3 "	7.00
3½ "	8.50
4 "	10.00
4½ "	15.00
5 "	20.00
6 "	25.00

We make Augers to go inside 2-inch pipe when ordered.

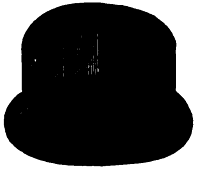


FIG. 510.

MALLEABLE DRIVE CAP.

For 1¼ in. pipe,	20c. each
" 1½ " "	24c. "
" 2 " "	44c. "

STEEL DRIVE HEADS—Solid.

For 1¼ in. pipe, each	$1.50
" 1½ " " "	2.00
" 2 " " "	2.50
" 2½ " " "	6.00
" 3 " " "	9.00
" 4 " " "	16.00

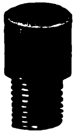


FIG. 181

Sand and Clay Auger.

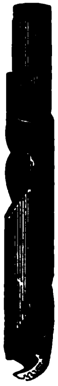


FIG. 13

Clay Auger.

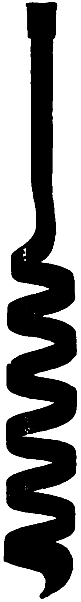


FIG. 15

Earth and Sand Boring Auger

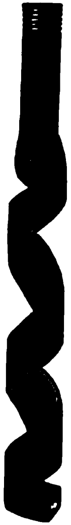


FIG. 32

SAND PUMP AND DRILL COMBINED.

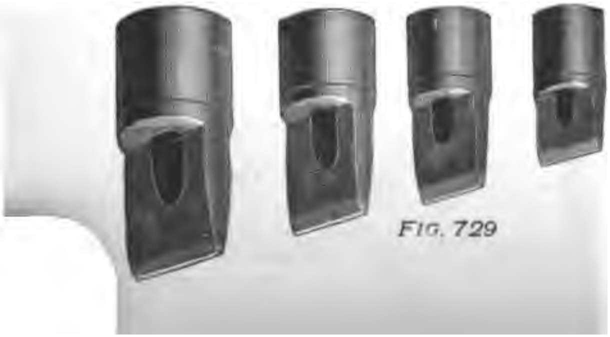


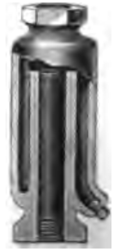
FIG. 729

FIG. 729. PRICE LIST.

Gas Pipe Thread Connection.	Actual Size of Bit.	Price.
1 inch	1¾ inches.	$1.25
1 "	2 "	2.00
1 "	2½ "	3.00
1¼ "	3 "	4.00

Fig. 219, Sand Catcher, 1¼ inch, each $2.00

Sand Catcher.



[illegible]

FIG. 656

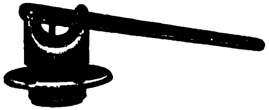


FIG. 657

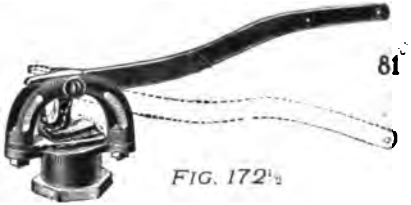


FIG. 172½

FIGS. 656, 657, 172½, 1265. WIND MILL TANK VALVES.

Size	¾ in.		1 in.		1¼ in.		1½ in.		2 in.		2½ in.		3 in.	
	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
Fig. 656	Virelay	$0.60	Virge	$0.60	Virgo	$0.75	Serfing	$0.90	Grafting	$1.25				
Fig. 657	Virent	.80	Virgin	.80	Virile	1.00	Grubber	1.25	Kidding	1.50				
Fig. 172½									Dotgond	5.00	Dotgost	$7.50	Dotgoud	$10.00
Fig. 1265	Scenega	1.25	Scenehi	1.38	Sceneit	1.50	Sceneju	3.00	Sceneko	5.00	Scenello	7.50	Scenemy	10.00

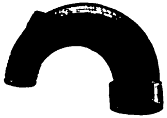


FIG. 407

FIG. 407. GOOSE-NECK OR SPOUT—SIZES, PRICES, ETC.

Butt, ¾-in. Pipe. Spout, ¾-in Hose.		Butt, 1-in. Pipe. Spout, 1-in. Hose.		Butt, 1¼-in. Pipe. Spout, 1¼-in. Hose.		Butt, 1½-in. Pipe. Spout, 1½-in. Hose.		Butt, 2-in. Pipe. Spout, 2-in. Hose.	
Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
Gladdest	$0.50	Gauzy	$0.60	Gap	$0.90	Gouty	$1.25	Grooming	$1.50

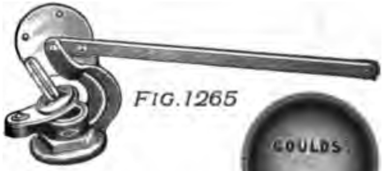


FIG. 1265

FIG. 350 AIR CHAMBER—FOR USE EITHER ON SUCTION OR DISCHARGE. SIZES, PRICES, ETC.

Size of Pipe	¾-in.	1-in.	1¼-in.	1½-in.	2-in.	2½-in.	3-in.	4-in.
Price	$1.75	$2.00	$2.75	$3.00	$5.00	$10.00	$12.50	$20.00

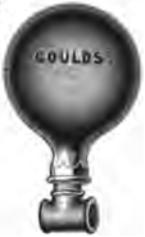


FIG. 350

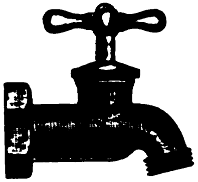


FIG. 1067
No. 1, $2.00 No. 2, $3.00

Fig. 1067 is Brass-fitted Compression Cock. Fig. 490 is Brass-fitted Plug Cock.

No. 1 Cock of either style has coupling nut which fits air chambers of our 2, 2½, and 3-inch House Force Pumps: Also Figs. 401, 402, 413 Nose of No. 1 Cocks is threaded for 1-inch hose coupling.

No. 2 Cock of either style has coupling nut which fits air chamber of our 3½ and larger House Force Pumps: Also Figs. 237 and 593. Nose of No. 2 Cock is cut 1½-in. iron pipe thread. Nut with hose tube for either 1 or 1¼-in. hose, furnished *if ordered* at extra price.

Fig. 1253, Water Conductor, has swivelled bail and is regularly tapped for 1¼-in. pipe; fitted 1½-in. to order, price, $1.00.

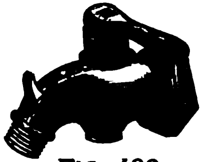


FIG. 490
No. 1......$2.00
" 2...... 3.00

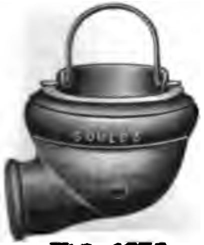


FIG. 1253

COPPER TANK FLOAT.

Can be bolted to a lever attached to Tank Valve to open and close automatically.

No. 4, 12 x 3 inches, $1.50 each.
" 6, 9½ x 2¾ " 1.10 "

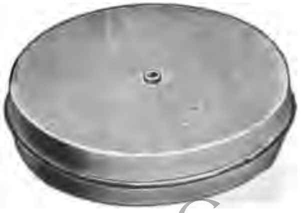


FIG. 159

GOULDS "SYPHON" WIND MILL FORCE PUMP.

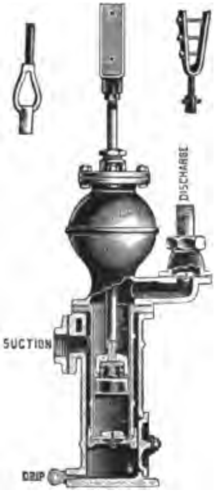


FIG 514½

In our "Syphon" Working Barrel the water enters the reservoir, or outer chamber, at suction opening, filling it with water to that point. In this body of water the brass-lined working cylinder, provided with brass plunger, etc., is suspended, leaving suitable space between inner and outer walls and at bottom, the effect of which is that Pump is always primed and ready for use. Plunger and rod may be drawn through top of air chamber without breaking any pipe connections. Wind mill slide included with Pump at prices given below. Forked wood rod coupling or harp connection furnished when ordered at $1.00 extra list on sizes up to and including 4-inch, and $2.50 extra list on larger sizes.

FIG. 514½. SIZES, PRICES, ETC.

Dia. Inner Cyl.	Suction and Discharge.	8-Inch Stroke.			10-Inch Stroke.			12-Inch Stroke.		
		Capacity per Stroke.	Cipher.	Brass-Lined.	Capacity per Stroke.	Cipher.	Brass-Lined.	Capacity per Stroke.	Cipher.	Brass-Lined.
2 in.	1¼ in. pipe	.11 gal.	Basem	$25.00	....	....	....	....	....	....
2½ "	1½ "	.17 "	Basidi	25.00	.21 gal.	Lamfik	$27.50	.25 gal.	Lamfud	$30.00
3 "	1½ "	.24 "	Basket	27.50	.30 "	Beardi	30.00	.37 "	Binder	32.50
3½ "	2 "	....	....	....	.42 "	Bearer	37.50	.50 "	Binding	40.00
4 "	2 "	....	....	....	.54 "	Bearh	42.50	.65 "	Bindwe	45.00
4½ "	2½ "	....	....	....	.69 "	Bearho	52.50	.83 "	Binerva	55.00
5 "	2½ "	....	....	....	.85 "	Bearing	62.50	1.02 "	Binnac	65.00
6 "	3 "	....	....	....	1.22 "	Befail	82.50	1.47 "	Befit	85.00

GOULDS "SYPHON" WELL FORCE PUMP.

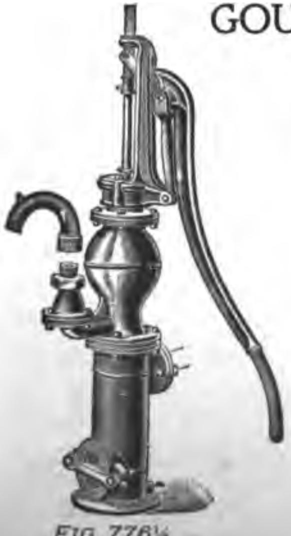


FIG 776½

Fig. 776½ represents "Syphon" Working Barrel described above, arranged with wind mill top and lever, for manual or wind power. Plunger and rod may may be drawn through top of air chamber without breaking any pipe connections. Prices given below include spout. Wind mill slide only sent when specially ordered Forked and harp connection furnished when so ordered at prices given above.

FIG. 776½. SIZES, PRICES, ETC.

Diameter Inner Cylinder.	Suction and Discharge.	*Lift and Force.	6-Inch Stroke.			10-Inch Stroke.		
			Capacity per Stroke.	Cipher.	Brass-Lined.	Capacity per Stroke.	Cipher.	Brass-Lined.
2 in.	1¼ in. pipe	100 ft.	.08 gal.	Lamfyl	$28.50	....	....	....
2½ "	1½ "	100 "	.13 "	Lamgag	28.50	.21 gal.	Laneck	$31.00
3 "	1½ "	100 "	.18 "	Laneba	31.00	.30 "	Lanedu	33.50
3½ "	2 "	100 "	....	....	....	.42 "	Laneel	42.50
4 "	2 "	100 "	....	....	....	.54 "	Larkob	47.50
4½ "	2½ "	75 "	....	....	....	.69 "	Larkock	60.00
5 "	2½ "	75 "	....	....	....	.85 "	Larkoda	70.00
6 "	3 "	75 "	....	....	....	1.22 "	Larkofa	90.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

GOULDS "SYPHON" WELL FORCE PUMP.

FOR MACHINE POWER.

Fig. 1091 is almost identical with our well known Fig. 514½, page 82, except that it is provided with pitman and guide, that it may be operated by any power.

In this Pump the water enters the reservoir, or outer chamber, at suction opening, located above valves, and fills it with water to that point. In this body of water, a brass inner cylinder, provided with brass plunger, etc., is suspended, leaving suitable space between inner and outer walls, the effect of which is that the Pump is always primed.

Plunger Rod may be drawn through top of Air Chamber, without breaking any pipe connections.

FIG. 1091. SIZES, PRICES, ETC.

Dia. Inner Cyl.	Suction and Discharge.	8-Inch Stroke.			10-Inch Stroke.			12-Inch Stroke.		
		Capacity per Stroke.	Cipher.	Brass-Lined.	Capacity per Stroke.	Cipher.	Brass-Lined.	Capacity per Stroke.	Cipher.	Brass-Lined.
2 in.	1¼ in. pipe.	.11 gal.	Gruff	$35.00	....	....	....	....	....	....
2½ "	1½ "	.17 "	Grufga	35.00	....	....	....	....	....	....
3 "	1½ "	.24 "	Grufho	37.50	.30 gal.	Grufju	$40.00	....	....	....
3½ "	2 "	....	....	....	.42 "	Grufky	47.50	.50 gal.	Grugcan	$50.00
4 "	2 "	....	....	....	.54 "	Gruga	57.50	.65 "	Grugcib	60.00
4½ "	2½ "	....	....	....	.69 "	Grugba	67.50	.83 "	Grugdo	70.00
5 "	2½ "	....	....	....	.85 "	Grugbin	77.50	1.02 "	Grugful	80.00
5½ "	3 "	....	....	....	1.22 "	Grugbod	97.50	1.47 "	Gruggad	100.00

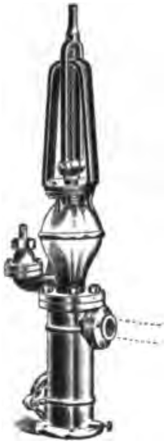


FIG. 1091

GOULDS "VIM" SYPHON FORCE PUMP.

Fig. 1192 shows our new pattern "Vim" Syphon Force Pump for wind mill or other power. Suction opening is at top of outer reservoir and consequently this reservoir is always filled with water. In this reservoir hangs the Brass Working Cylinder. This insures the pump being always primed with valves wet and ready for action. Working Cylinder, plunger and valves can be removed without breaking pipe connection. Cylinder Seamless Brass. All Brass Plunger. Lower valve cage and seat brass. Brass-cased rod and wind mill slide. When wanted with malleable forked rod (instead of wind mill slide), we add $1.50 extra to list prices.

FIG. 1192. SIZES, PRICES, ETC.

Dia. Cyl.	Suction and Discharge.	8-Inch Stroke.			12-Inch Stroke.		
		Capacity per Stroke.	Cipher.	Brass Cyl.	Capacity per Stroke.	Cipher.	Brass Cyl.
2½ in.	1½ in. pipe.	.17 gal.	Quieul	$18.50	.26 gal.	Quigeg	$20.00
3 "	1½ "	.24 "	Quifa	21.00	.37 "	Quihat	22.50
3½ "	2 "	.33 "	Quifel	25.00	.50 "	Quihen	27.50
4 "	2 "	.43 "	Quigas	30.00	.65 "	Quihid	32.00

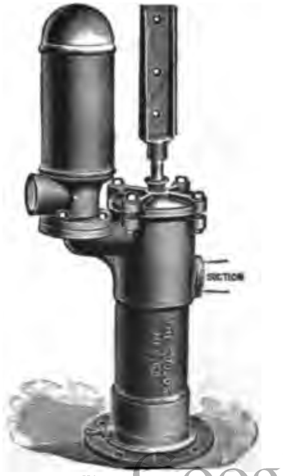


FIG. 1192

GOULDS WELL FORCE PUMP.

WITH OSCILLATING STUB FOR WIND OR OTHER POWER.

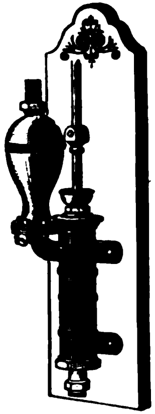


FIG 266

Fig. 266 shows a complete and cheap Force Pump, to be operated by wind mill or other power. May be used in buildings or placed in dug wells out of reach of frost, or in warm climates used above any style of well. Should not be placed more than 25 feet above water supply. Furnished with brackets and plank for attaching to beam, etc.

Fitted for wrought-iron pipe as given in table, unless otherwise ordered. Furnished with Check Valve instead of Air Chamber $2.00 less list. Forked Wood-Rod Coupling, when required, $1.00 extra list. Pump, less Plank, 50c less list.

FIG. 266. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Well Rod.	*Lift and Force.	IRON.		BRASS-LINED.	
								Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.10 gal.	1 in. pipe	1 in. pipe	⅝ in.	75 ft.	Clew	$11.50	Larkugs	$14.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	⅝ "	75 "	Cliff	12.00	Larkwon	14.50
4	3 "	7 "	.21 "	1¼ "	1¼ "	⅝ "	75 "	Climb	12.50	Landefs	16.00
6	3½ "	7 "	.29 "	1½ "	1½ "	⅝ "	50 "	Climber	19.00	Landego	23.50
8	4 "	7 "	.38 "	2 "	1½ "	⅝ "	50 "	Climbing	21.00	Landib	26.00

*Depth of wells in which Cylinders may be operated, or total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS DOUBLE-ACTING WELL FORCE PUMP.

FOR WIND MILL OR OTHER POWER.

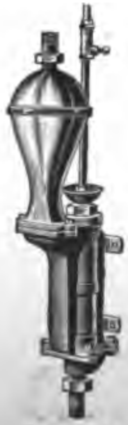


FIG. 448

Fig. 448 shows a Double-Acting Force Pump, with brackets, by many preferred for use with wind mills. The piston rod can be made with a stub end to *weld* on an additional rod or with a malleable coupling for *screwing* on the rod, as ordered. The smaller sizes are preferably employed, on account of the small degree of power requisite, while the quantity of water obtained is equal to the capacity of a single-acting cylinder of much greater size.

FIG. 448. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Rev.	Suction.	Discharge.	Well Rod.	*Lift and Force.	IRON.		BRASS-LINED.	
								Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.19 gal.	1¼ in. pipe	1¼ in. pipe	½ in.	60 ft.	Foxy	$15.00	Landifl	$17.50
2	2½ "	7 "	.29 "	1¼ "	1¼ "	½ "	60 "	Frame	15.50	Landois	18.00
4	3 "	7 "	.43 "	1½ "	1¼ "	½ "	60 "	Fray	19.00	Landubs	22.50
6	3½ "	7 "	.58 "	1½ "	1½ "	⅝ "	45 "	Freak	22.00	Leabac	26.50
8	4 "	7 "	.76 "	2 "	2 "	¾ "	45 "	Fritted	38.00	Leabid	43.00

*Depth of wells in which Cylinders may be operated, or total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS "PACIFIC" WELL FORCE PUMP.

FOR HAND AND WIND MILL.

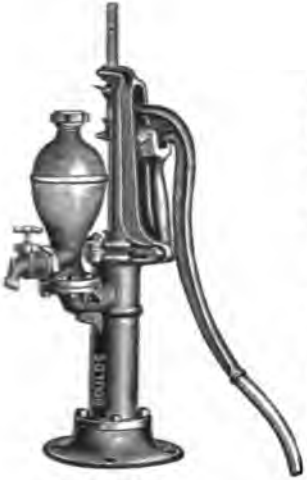


FIG. 674

Fig. 674 represents our "Pacific" Well Force Pump on base, for hand or wind mill use. The Pumps have been upon the market for some years and are preferred above all others in certain localities. They are made in the very best manner and combine strength with graceful proportions. All are made with brass cased rods, brass stuffing box and valve seats, and provided with new style compression cock spout. Pump cylinder may be emptied of water by raising lever and tripping valve.

All Brass Pumps furnished to order.

Fig. 601 represents our "Pacific" Well Force Pump with brackets, mounted on plank, for hand or wind mill use.

It is a strong and efficient Pump, having a brass cased rod and brass stuffing box and valve seats. Provided with new style compression cock spout. Pump cylinder may be emptied of water by raising lever and tripping valve.

All brass Pumps furnished to order. Furnished without plank at a reduction of 50 cents list.

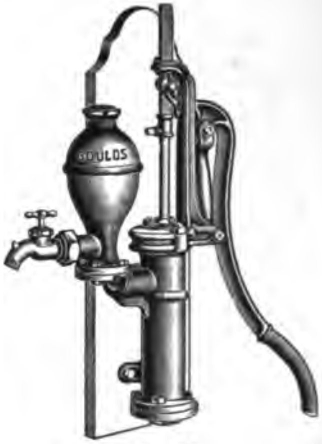


FIG. 601

FIG. 674. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.		Iron.		Brass-Lined.		Brass Cylinder.	
					Top of Air Chamber.	Spout.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
2	2½ in.	6½ in.	.14 gal.	1¼ in. pipe	1¼ in.	1 in. hose.	Robe	$14.50	Granfuf	$17.00	Robin	$20.00
4	3 "	6½ "	.20 "	1¼ "	1¼ "	1 "	Roded	16.50	Granfylo	19.00	Roely	21.50
6	3½ "	6½ "	.27 "	1½ "	1½ "	1 "	Rollat	24.00	Graga	27.50	Romp	32.00
8	4 "	6½ "	.35 "	2 "	1½ "	1 "	Roofed	25.50	Grangis	30.50	Rookl	38.50

FIG. 601. SIZES, PRICES. ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharges.		Iron.		Brass-Lined.		Brass Cylinder.	
					Top of Air Chamber.	Spout.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
2	2½ in.	6½ in.	.14 gal.	1¼ in. pipe	1¼ in.	1 in. hose	Life	$14.50	Grangoa	$17.00	Lifted	$20.00
4	3 "	6½ "	.20 "	1¼ "	1¼ "	1 "	Limb	16.50	Grangub	19.00	Limel	21.50
6	3½ "	6½ "	.27 "	1½ "	1½ "	1 "	Liner	24.00	Granhab	27.50	Linked	32.00
8	4 "	6½ "	.35 "	2 "	1½ "	1 "	Lion	25.50	Granhij	30.50	Lisped	38.50

GOULDS "ATLANTIC" DOUBLE-ACTING FORCE PUMP.

FOR HAND, WIND MILL OR OTHER POWER.

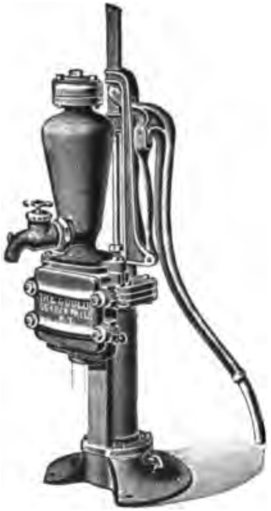


FIG. 1216

Fig. 1216 shows our new "Atlantic" Double-Acting Force Pump with lever and cock spout. Valves are brass, leather-faced and accessible by removing valve box cover. The Piston is double cup leather packed. Pump is strong, compact and of neat design, capable of throwing solid stream to a great height. Discharge may be made at top of air chamber if so desired. Drip plug is provided for emptying Pump in cold weather. Suction and discharge is fitted for iron pipe as specified. Nose of cock screwed for hose coupling.

Fig. 1217 shows our new "Atlantic" Double-Acting Force Pump mounted on plank. It may be operated by hand or connected to Wind Mill or other power as occasion requires. Its construction is essential with that of Fig. 1216, described above and the same remarks will apply to both, Prices include plank.

Furnished without plank at 50 cents less list.

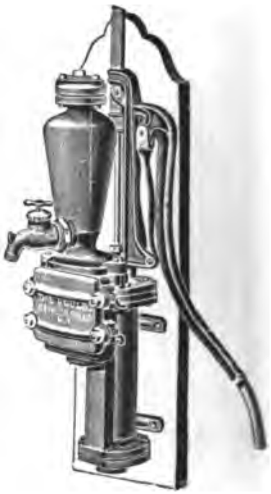


FIG. 1217

FIG. 1216. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Cap per Rev.	Suction.	Discharges.		*Lift and Force.	IRON.		BRASS-LINED.	
					Top of Air Chamber.	Cock Spout.		Cipher.	Price.	Cipher.	Price.
4	3 in.	6 in. Hand 8 " Mill	.49	1½ in.	1½ in. pipe	1 in. hose	75	Gageul	$30.00	Galler	$33.50
6	3½ "		.67	2 "	2 "	1¼ "	50	Gageva	37.50	Gallest	42.50
8	4 "		.87	2 "	2 "	1¼ "	50	Gagfly	45.00	Gallic	50.00

FIG. 1217. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Cap per Rev.	Suction.	Discharges.		*Lift and Force.	IRON.		BRASS-LINED.	
					Top of Air Chamber.	Cock Spout.		Cipher.	Price.	Cipher.	Price.
4	3 in.	6 in. Hand 8 " Mill	.49	1½ in.	1½ in. pipe	1 in. hose	75	Gallida	$30.00	Gavale	$33.50
6	3½ "		.67	2 "	2 "	1 "	50	Gallio	37.50	Gavame	42.50
8	4 "		.87	2 "	2 "	1 "	50	Gavab	45.00	Gavana	50.00

* Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS "ATLANTIC" DOUBLE-ACTING FORCE PUMPS.

FOR MANUAL, WIND MILL OR OTHER POWER.

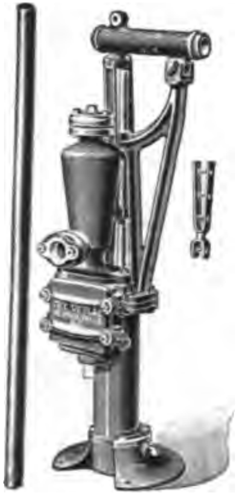


FIG. 1211

Figs. 1211 and 1212 represent a new style of Double-Acting Force Pumps, every detail of which has been carefully considered in the design. We offer them with iron or brass-lined cylinder. The valves are brass, leather-faced and have brass seats which, combined, make the best construction. Valves are accessible by removing valve box cover. The Piston is packed with double cup leathers. The action of these Pumps is easy, the discharge uniform and constant, making them very effective and durable.

Fig. 1211 has long wood lever for hand use but can be arranged for power by attaching special forked rod which is furnished with any size Pump at $1.50 extra list.

Fig. 1212 is the same Pump which we build for power, only arranged with pitman and stub end for welding to connecting rod. We supply special forked rod with this Pump at an extra list of $1.50.

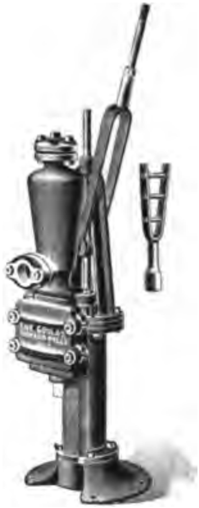


FIG. 1212

FIG. 1211. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Rev.	Suction.	Discharge.	*Lift and Force.	IRON.		BRASS-LINED CYLINDER.	
							Cipher.	Price.	Cipher.	Price.
4	3 in.	10 in. for 8 in. stroke mill.	.49 gal.	1½ in. pipe	1½ in. pipe	75 ft.	Frecob	$40.00	Frecody	$43.50
6	3½ "	10 " 8 " "	.67 "	2 "	2 "	50 "	Fusuba	50.00	Fusuef	55.00
8	4 "	10 " 8 " "	.87 "	2 "	2 "	50 "	Fusudu	60.00	Fusufo	65.00

FIG. 1212. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Rev.	Suction.	Discharge.	*Lift and Force.	IRON.		BRASS-LINED CYLINDER.	
							Cipher.	Price.	Cipher.	Price.
4	3 in.	10 in. for 8 in. stroke mill.	.49 gal.	1½ in. pipe	1½ in. pipe	75 ft.	Fusugas	$40.00	Fusujag	$43.50
6	3½ "	10 " 8 " "	.67 "	2 "	2 "	50 "	Fusugib	50.00	Gagest	55.00
8	4 "	10 " 8 " "	.87 "	2 "	2 "	50 "	Fusuho	60.00	Gageta	65.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

"STAR" DOUBLE ACTING RAILROAD FORCE PUMPS.

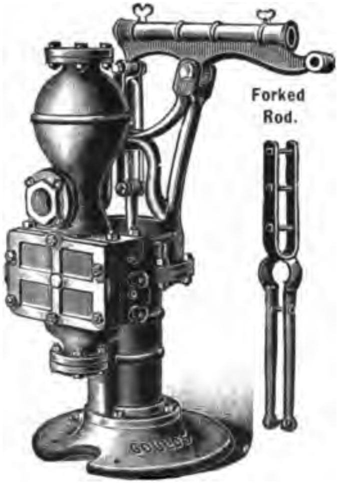


FIG. 338

FOR HAND OR MACHINE POWER.

Figs. 338 and 339 represent our famous "Star" Double-Acting Railroad Force Pumps, specially designed for the use of distilleries, mills, railroad companies, etc. Briefly described: The Pump is exceptionally heavy and strong in casting, the plunger rod and solid-cross head are of bronze, while the valves (four in number) with their seats, are of the same metal, and grouped under valve cover in front. These valves are of a new type, calculated to develop greatest efficiency, and rubber faced, rendering them perfectly tight and relieving Pump of all pounding.

Fig. 338 is designed to be worked by wood levers, but can be arranged for power as well by substituting special Strap Rod for regular straps, at $5.00 extra list.

Fig. 339 is the same Pump, which we build in larger sizes, with stub end for welding to connecting rod, driven by any power, as steam or wind, working head, counter shaft, walking beam, etc., or with Forked Rod, at $5.00 extra list.

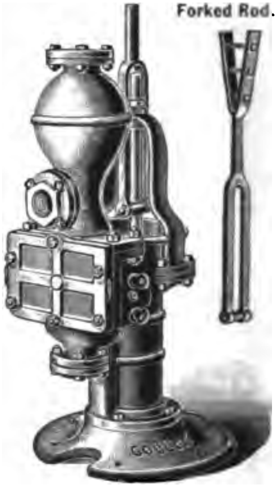


FIG. 339.

FIG. 338. SIZES. PRICES, ETC.

Dia. Cyl.	Stroke.	Capacity per Rev.	Suction.	Discharge.	*Lift and Force.	IRON.		BRASS-LINED CYL.	
						Cipher.	Price.	Cipher.	Price.
3 in.	8 in. for 6 in. stroke mill.	.49 gal.	1½ in. pipe.	1½ in. pipe.	75 ft.	Ebon	$65.00	Edge	$72.00
4 "	8 " 6 " "	.87 "	2 "	2 "	75 "	Echo	75.00	Edict	82.00
5 "	8 " 6 " "	1.36 "	2½ "	2½ "	75 "	Eddy	90.00	Edify	97.00
6 "	8 " 6 " "	1.96 "	3 "	3 "	75 "	Edend	120.00	Edited	130.00

FIG. 339. SIZES, PRICES, ETC.

Dia. Cyl.	Stroke.	Capacity per Rev.	Suction.	Discharge.	*Lift and Force.	IRON.		BRASS-LINED CYL.	
						Cipher.	Price.	Cipher.	Price.
3 in.	10 in. for 8 in. stroke mill.	.49 gal.	1½ in. pipe.	1½ in. pipe.	100 ft.	Educt	$65.00	Elder	$72.00
3 "	14 " 12 " "	.73 "	1½ "	1½ "	100 "	Eject	78.00	Ella	90.00
4 "	10 " 8 " "	.87 "	2 "	2 "	100 "	Eel	75.00	Elect	82.00
4 "	12 " 10 " "	1.09 "	2 "	2 "	100 "	Eldly	95.00	Elking	105.00
4 "	14 " 12 " "	1.31 "	2 "	2 "	100 "	Ekela	101.00	Elms	115.00
5 "	10 " 8 " "	1.36 "	2½ "	2½ "	100 "	Egg	90.00	Elfed	97.00
5 "	14 " 12 " "	2.04 "	2½ "	2½ "	100 "	Eland	120.00	Elogy	135.00
5 "	17 " 15 " "	2.55 "	2½ "	2½ "	100 "	Elate	135.00	Elong	150.00
5 "	20 " 18 " "	3.06 "	2½ "	2½ "	100 "	Elapse	170.00	Elastic	180.00
6 "	10 " 8 " "	1.96 "	3 "	3 "	100 "	Elder	120.00	Elite	130.00
6 "	16 " 14 " "	3.43 "	3 "	3 "	100 "	Elbow	175.00	Elope	190.00
6 "	20 " 18 " "	4.41 "	3 "	3 "	100 "	Eldate	225.00	Elsen	250.00
7 "	14 " 12 " "	4.00 "	4 "	4 "	75 "	Elderly	260.00	Eldern	285.00
7 "	16 " 14 " "	4.66 "	4 "	4 "	75 "	Elding	275.00	Eldorad	300.00
7 "	20 " 18 " "	6.00 "	4 "	4 "	75 "	Elapsot	300.00	Elapsut	330.00
8 "	14 " 12 " "	5.22 "	5 "	5 "	75 "	Electio	300.00	Elector	330.00
8 "	17 " 15 " "	6.53 "	5 "	5 "	75 "	Electri	340.00	Electiv	375.00
8 "	20 " 18 " "	7.82 "	5 "	5 "	75 "	Elapsub	375.00	Elapsyd	415.00

*Total lift and force from supply to point of delivery. Pump not more than 25 feet above water.

GOULDS WIND MILL IRRIGATION CYLINDER.

Fig. 1064 is largely used with Wind Mills and other power to raise water in large quantities for irrigation or drainage. Double hinged valve in plunger affords ample water way. Lower valve is of same type. We offer in Regular Brass-Lined and Special Brass-Lined, the latter having an extra heavy lining and plunger with brass follower 3 inches long, extra heavy brass valve weights and brass cross bar and bolts. Unless otherwise ordered we fit both suction and discharge for wrought-iron pipe as per table, but when especially ordered can fit top for spiral riveted pipe of same diameter as cylinder and through which the plunger can be withdrawn.

FIG. 1064. SIZES, PRICES, ETC.

Diameter and Stroke.	Capacity per Stroke.	Suction and Discharge.	Wood Rod.	*Lift and Force.	REGULAR BRASS-LINED.		SPECIAL BRASS-LINED.	
					Cipher.	Price.	Cipher.	Price.
6 x 15 in.	1.84 gal.	3 in. pipe	2 in.	100 ft.	Numgo	$26.00	Iteno	$40.00
7 x 15 "	2.49 "	4 "	2 "	100 "	Numhen	31.00	Itenode	50.00
8 x 15 "	3.26 "	4 "	2 "	75 "	Ondlaw	37.50	Numfyx	60.00
10 x 15 "	5.10 "	5 "	2½ "	50 "	Ondleo	52.50	Palperl	90.00
12 x 15 "	7.35 "	6 "	3 "	50 "	Ondlom	75.00	Palpida	120.00

*Depth of Wells in which Cylinders may be operated or total lift and force from surface of water.

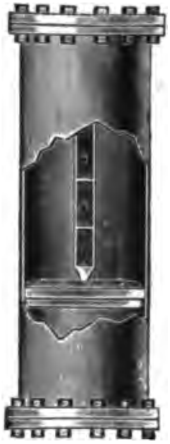


FIG. 1064

GOULDS WIND MILL IRRIGATION PUMPS.

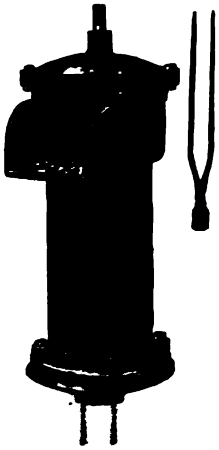


FIG. 1043

Figs. 1043 and 1043½ have special application for pumping water from shallow wells or creeks, for irrigating, etc. They are self-contained, have Brass-Lined Cylinder and leather-faced valves, readily accessible. If half-hose coupling for Fig. 1043½ is ordered, extra charge is made, otherwise both Pumps have pipe thread at suction as per table. Forked rod coupling is furnished without extra charge.

FIGS. 1043 AND 1043½. SIZES, PRICES, ETC.

Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Lift.	FIG. 1043.		FIG. 1043½.	
					Cipher.	Brass Lined.	Cipher.	Brass Lined.
6 in.	12 in.	1½ gals.	3-in. pipe	20 ft.	Bringer	$31.00	Broach	$32.50
8½ "	12 "	3 "	4 " "	20 "	Baldpat	40.00	Broaden	42.50
10 "	12 "	4 "	5 " "	20 "	Painga	55.00	Palpa	60.00
12 "	12 "	6 "	6 " "	20 "	Painhat	75.00	Palpep	80.00

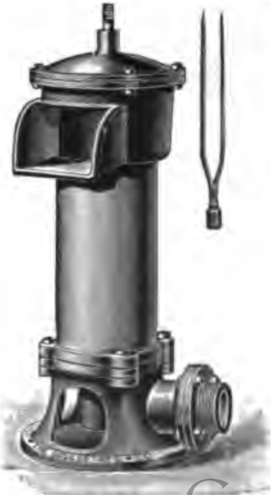
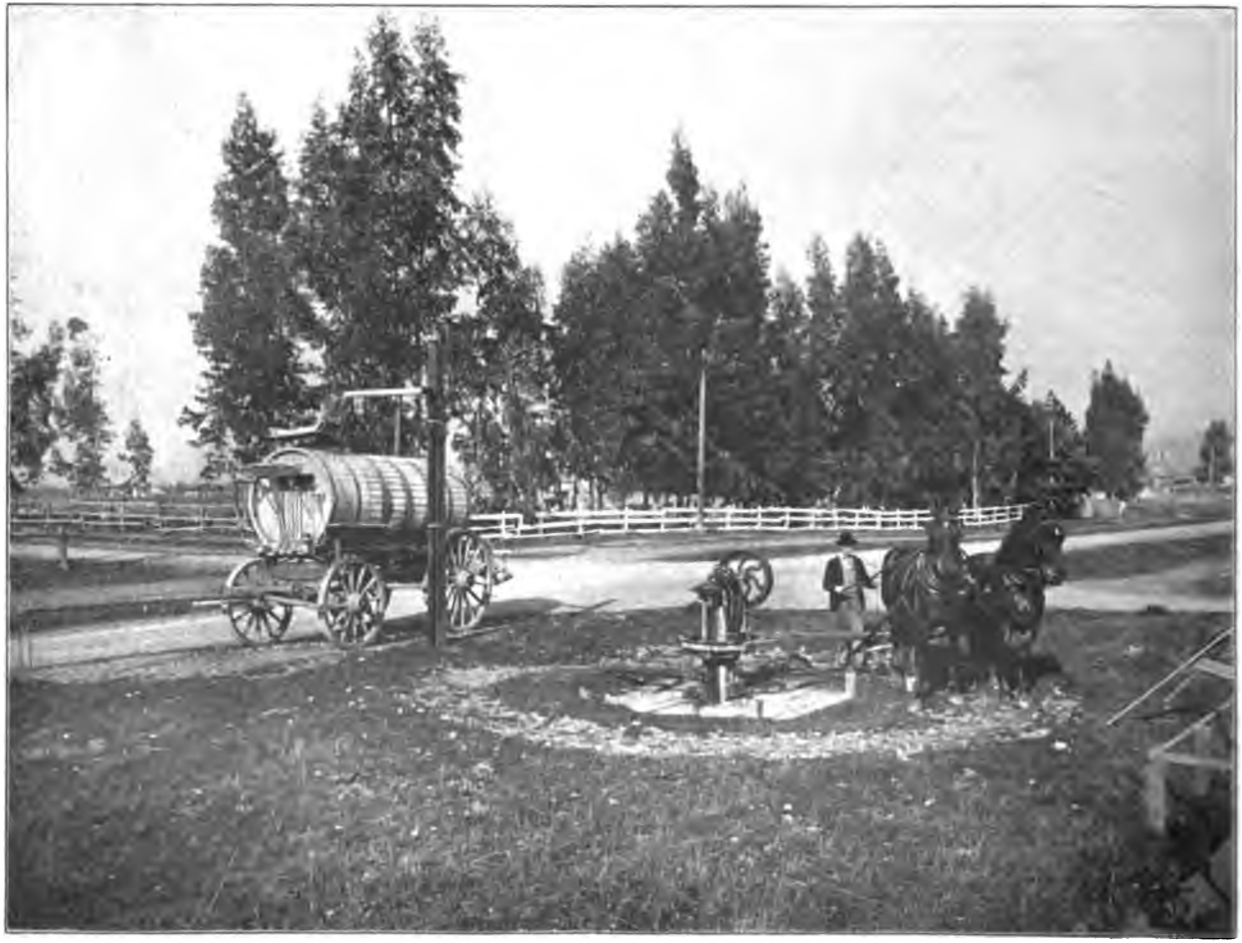


FIG. 1043½



Our illustration shows a very common application of our Fig. 1121, Combined Triplex Pump and Horse Power, in operation, filling road sprinkler wagon. This apparatus may be used wherever water is within suction distance, 15 to 20 feet below surface of ground, for water supply, irrigation, etc.

The line of Pumps and Horse Powers will be found between pages 91 and 97.

GOULDS TRIPLEX POWER PUMP.

FOR ELEVATIONS UP TO 50 FEET OR EQUIVALENT PRESSURE.

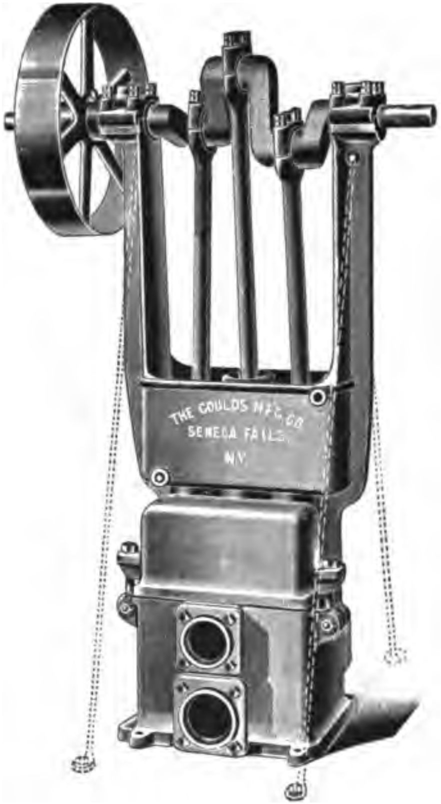


FIG. 1010

Fig. 1010 is a new type of Triplex Power Pump for such light service as required for irrigating land, watering stock, filling tanks, etc. It is fitted with pulley to be *driven by belt connection from gas, gasoline, petroleum engine, or other motive power.*

The valves are rubber faced, with bronze seats; the plungers are inside-packed and have water seals; substantial connecting rods and crank shaft with ample bearings. Crank shaft is extended at both ends, so that pulley can be used at either end, or pulleys may be mounted at both ends.

It has but few working parts and they are readily accessible for inspection and care. Altogether it is a most excellent, serviceable Pump and meets with a large demand from the agricultural districts.

FIG. 1010. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Rev. of Crank Shaft.	Capacity per Hour at 40 Revolutions per Minute.	Suction.	Discharge.	Pulley.	Cipher.	Brass-Lined Cylinders.
Diameter.	Stroke.							
4 in.	8 in.	1.3 gals.	3,120 gals.	3½ in. pipe	3 in. pipe	20 x 4 in.	Riceba	$120.00
5 "	10 "	2.5 "	6 000 "	4 "	4 "	30 x 5 "	Boycott	200.00
6 "	12 "	4.4 "	10,560 "	5 "	5 "	36 x 6 "	Boyhood	300.00

GOULDS COMBINED TRIPLEX PUMP AND HORSE POWER.

FOR ELEVATIONS TO 50 FEET OR EQUIVALENT PRESSURE.

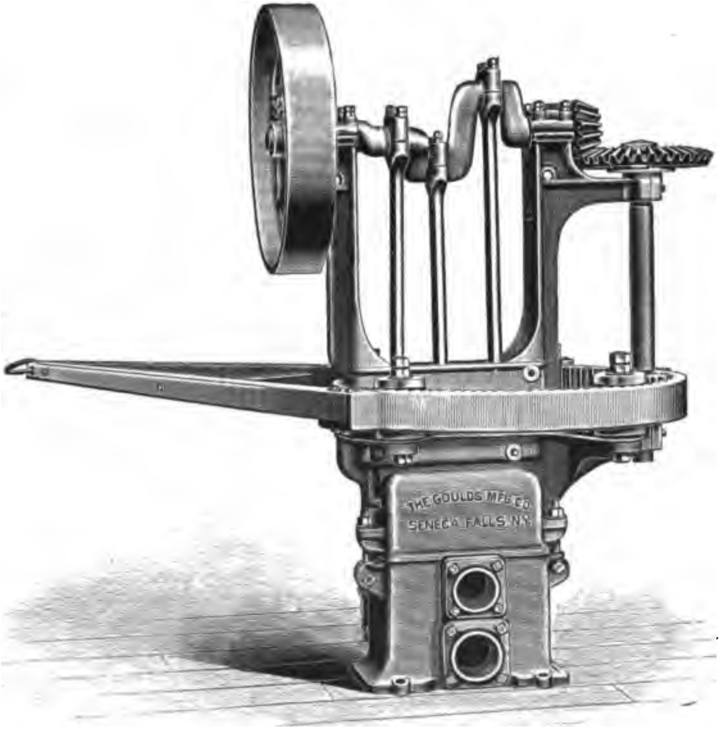

THE GOULDS MFG. CO.
SENECA FALLS, N.Y.

FIG. 1121.

Fig. 1121 is a modification of our Fig. 1010 (page 91), Triplex Pump with horse power gear surrounding and direct connected to pump crank shaft. The advantages of the Triplex type Pump was never more clearly demonstrated than when operated by horse power. The operation of this Pump is uniform and smooth, entirely free from that jar and hitch in other Pumps, which is so trying to the animal. Pump is regularly supplied with double sweep, to which one or two horses may be attached. It is regularly geared 14 to 1. Animal will make three to four circuits per minute, giving pump crank shaft a speed of 40 to 50 revolutions per minute. This outfit is especially adapted for farm or country pumping, and offers advantages over wind power in that it is always ready for use and can be transported if necessary.

FIG. 1121. SIZE, CAPACITY, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.	Capacity per Hour at 40 Revolutions per Minute.	Suction.	Discharge.	Cipher.	Brass-Lined Cylinders.
Diameter.	Stroke.						
4	8	1.3 gals.	3120 gals.	3½ in. pipe	3 in. pipe	Wooraly	$200.00

GOULDS DOUBLE GEARED IRON HORSE POWER.

FOR ONE OR TWO HORSES.

The illustration shows a very powerful Double-Geared Iron Horse Power for one or two horses, with covered internal master gear, two babbitted 1½-in. journal boxes. driver's seat, pole and all necessary details.

This Horse Power is geared about 14 to 1. The usual travel of horse or other animal is three to four circuits per minute, giving the Tumbling Shaft a speed of from 40 to 50 revolutions per minute. By providing extra length wrought-iron Tumbling-Shaft, Plummer Blocks and Driving Pulley at end (which we list below), this Power may be employed for driving our Fig. 1010, Triplex Irrigating Pump (illustrated on page 91) or other Power Pump. Of course it has a wide range of application for other duties where horse power can be employed.

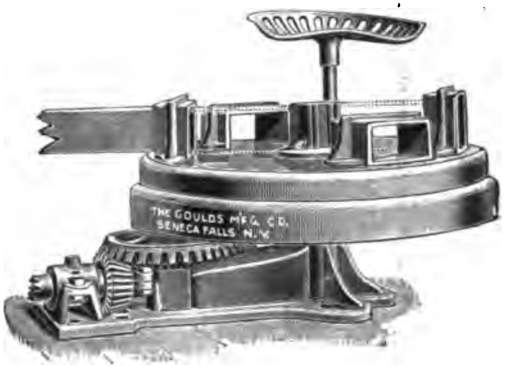

THE GOULDS MFG. CO.
SENECA FALLS, N.Y.

FIG. 914

Horse Power alone weighs about 550 pounds. Sweeps about 60 pounds each. Ten feet Shafting with Face Plate, etc., 200 pounds.

FIG. 914. PRICES, ETC.

Iron Horse Power, with one pole — for one horse	**(Weir)**	**$90.00**
Iron Horse Power, with two poles — for two horses	**(Weirda)**	**93.00**
With 10 feet 2 inch Wrought-Iron Tumbling Shaft and Face Plate at end, for 6, 8 and 10 inch stroke, extra		**10.00**
With 10 feet 2 inch Wrought-Iron Tumbling Shaft and 30 x 6 Driving Pulley at end, and 2 Plummer Blocks, extra		**20.00**
2 inch Wrought-Iron Tumbling Shaft, per foot, extra		**.75**
Air Chamber with Tee for 3 inch pipe, extra		**7.50**
Heavy Balance Wheel, 36 x 4½ inch, extra		**12.00**
Plummer Blocks, extra		**3.00**

GOULDS IRON HORSE POWER.

FOR ONE OR TWO HORSES.

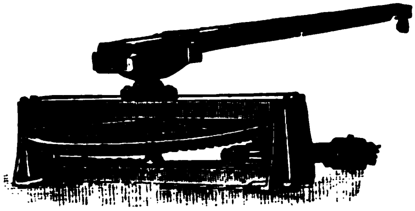


FIG. 597

The cut shows a very simple, though thoroughly constructed One-Horse or Pony Gear for operating any kind of agricultural machinery, as feed cutters, corn mills, etc. We furnish it complete, as shown in cut, with universal joint and stub end to weld to horizontal shaft, and hardwood pole ten feet long. The animal will ordinarily make from three to four circuits per minute, giving the tumbling shaft a speed of 20 to 25 revolutions.

Fig. 597½ represents a larger form of our Fig. 597, described, and can be driven by one or two horses.

SIZES, PRICES, ETC.

	Geared.	Size Frame.	Cipher.	Price.
Fig. 597, One-horse	6½ to 1	38 x 12 in., 10 in. high	Miry	$55.00
Fig. 597½, Two-horse	6 to 1	48 x 32 " 13 "	Missed	120.00

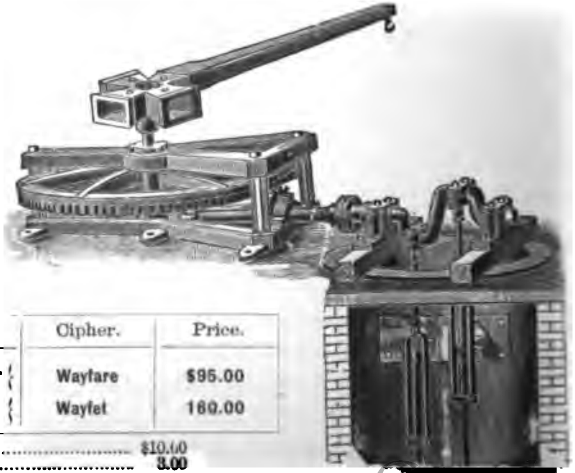
When pole is not furnished a reasonable reduction will be made.

GOULDS HORSE GEAR PUMPING APPARATUS.

FOR ONE OR TWO HORSES.

Fig. 884 consists of Horse Gear amply strong for one horse; two-throw wrought-iron crank shaft, plummer blocks for mounting on timbers placed on top of well, slings, guides and rods for connecting to Fig. 527½, Double Barrel Pump, page 96. The apparatus is very simple, requires but little attention. From three to four circuits a minute are ordinarily made, giving the tumbling shaft a speed of 20 to 25 revolutions per minute. We give prices below and also upon extra tumbling shaft, plummer blocks and universal coupling. Arranged in this manner, animal tracks between well and gear. A track with radius of ten feet is recommended. Price includes one pole.

Fig. 885. Horse Gear Pumping Apparatus, is practically the same as our Fig 884 described, but about twice as heavy and powerful, and designed to be operated by two horses Price includes one pole When furnished with single throw crank deduct $10.00 list.



SIZES, PRICES, ETC.

	Stroke.	Geared.	*Will Operate.	Cipher.	Price.
Fig. 884, One-horse Gear	10 in.	6½ to 1	2½ in. double cyl., 85 ft. 3 " " 55 "	Wayfare	$95.00
Fig. 885, Two-horse Gear	10 "	6 to 1	3½ " " 80 " 6 " " 30 "	Wayfet	160.00

Extra Hardwood Pole	$8.00	Universal Coupling	$10.00
2-inch Tumbling Shaft, per foot	.75	Plummer Blocks	8.00

*Smaller Cylinders in proportionately deeper, and larger Cylinders in shallower wells.

GOULDS HORSE GEAR PUMPING APPARATUS.

FOR ONE OR TWO HORSES.

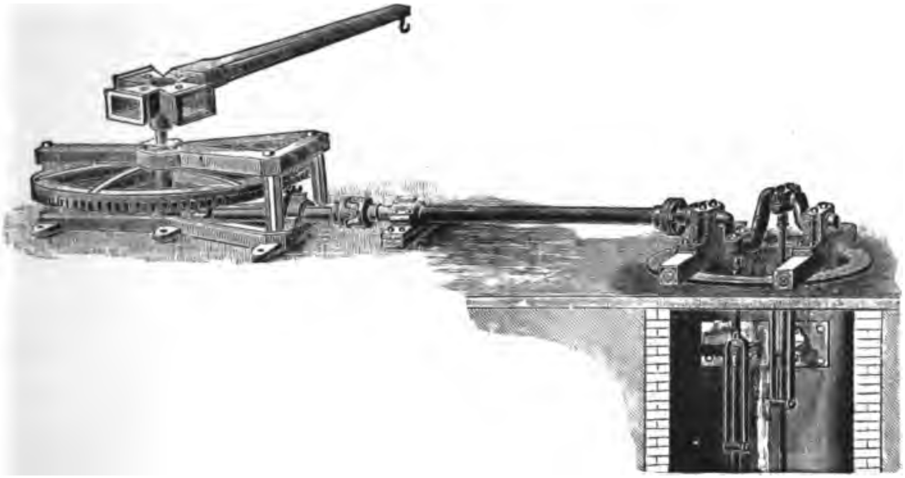


FIG. 894

This consists of horse gear amply strong for two horses; 10 feet of shafting with plummer blocks and couplings, two-throw wrought-iron crank shaft, plummer blocks for mounting on timbers placed on top of well, slings, guides and rods for connecting to pump rods below. The apparatus is very simple, requires but little attention and will work satisfactorily. A track with radius of 10 feet is recommended, the animal tracking between well and gear with this outfit. An animal makes three to four circuits per minute, giving tumbling shaft a speed of 20 to 25 revolutions. Power of donkey or pony one-half that of horse. We recommend our Fig. 527½ (given on next page), for use with this horse gear.

FIG. 894. SIZES, PRICES, ETC.

	Stroke.	Geared.	* Will Operate.	Cipher.	Price.
One Horse Gear..................	10 in.	6 to 1	2½ in. Double Cylinder, 85 ft. 3 " " " 55 "	Bondmaid	$120.00
Two Horse Gear..................	10 "	6 to 1	3½ " " " 80 " 6 " " " 30 "	Bondman	170.00

*Smaller Cylinders in proportionately deeper, and larger Cylinders in shallower Wells.

GOULDS SINGLE AND DOUBLE-BARREL PUMPS.

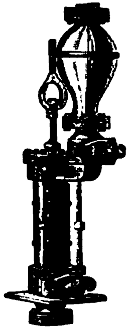


FIG. 526½

FOR DEEP WELLS.

Fig. 526½ represents our Single-Barrel Deep Well Pump, with air chamber in iron or with brass cylinders, as ordered, with doors at top and bottom, allowing free access to all valves. This Pump may be operated by auy of our pumping apparatuses, pages 100 to 103, or with our Horse Gears with single throw crank, Figs. 884, 885 and 894, pages 94 and 95. A check or foot valve should be placed at extremity of suction pipe. We fit with harp connection and stub for welding to connecting rod.

Fig. 527½ represents our superior Double-Barrel Deep Well Pump, in iron or with brass cylinders, as ordered, with doors at top and bottom for access to all valves.

They are also built with brass stuffing boxes, buckets, rods, etc., and fitted for welding connecting rods to stub with bow, as shown in cut, or pin and socket stub, as preferred. These Double-Barrel Pumps are specially designed to be operated by our Horse Gears, pages 94 and 95, for irrigating service, etc.

Pumps may be worked at 30 to 40 revolutions per minute, according to depth of well.

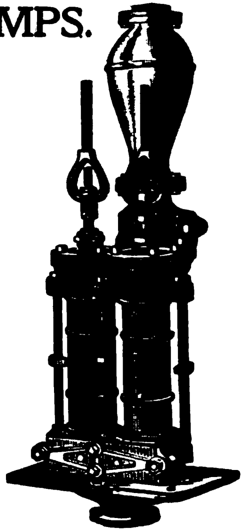


FIG. 527½

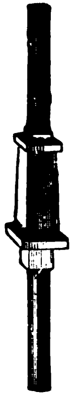


FIG. 515

SIZES, PRICES ETC.

Fig.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction and Discharge.	*Lift and Force.	Well Rod.	Iron Barrel.		Brass Barrel.	
							Cipher.	Price.	Cipher.	Price.
526½	2½ in.	10 in.	.21 gal.	1½ in. pipe	200 ft.	⅞ in.	Jawad	$42.00	Jibbo	$44.50
"	3 "	10 "	.31 "	1½ "	200 "	⅞ "	Jayel	44.00	Jigar	49.50
"	3½ "	10 "	.42 "	2 "	150 "	⅞ "	Jeerba	49.50	Jobba	57.00
"	4 "	10 "	.54 "	2 "	150 "	⅞ "	Jerko	62.00	Jog	71.00
"	5 "	10 "	.85 "	2½ "	100 "	⅞ "	Jestiu	84.50	John	103.00
"	6 "	10 "	1.22 "	3 "	100 "	⅞ "	Jetam	101.25	Join	129.00
527½	2½ "	10 "	.42 "	1½ "	200 "	⅞ "	Joke	58.00	July	71.00
"	3 "	10 "	.60 "	2 "	200 "	⅞ "	Jolt	64.00	Jump	81.00
"	3½ "	10 "	.84 "	2½ "	150 "	⅞ "	Jots	74.00	June	93.00
"	4 "	10 "	1.08 "	2½ "	150 "	⅞ "	Joves	85.00	Junks	108.00
"	5 "	10 "	1.70 "	3 "	100 "	⅞ "	Joy	120.00	Jury	175.00
"	6 "	10 "	2.44 "	3½ "	100 "	⅞ "	Jug	160.00	Just	235.00

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS ROD COUPLINGS AND GUIDES.

FIG. 515. WELL ROD JOINT AND BRASS BUSH.

Size Rod, In.	⅝	¾	⅞	1
Cipher.........	Getterst	Gilding	Gimmal	Girlish
Price..	$1.20	$1.38	$1.75	$2.45

FIG. 516. SINGLE AND DOUBLE ROLLER GUIDES FOR PISTON RODS.

For Rod......	⅝ or ¾ In.		⅞ In.		1 In.		1¼	
	Cipher	Price	Cipher	Price	Cipher.	Price	Cipher	Price
Sing. Roller	Vesta	$1.25	Vergont	$1.50	Venume	$2.45	Leabjey	$3.00
Doub. Roller	Versing	2.25	....	....	....	....	....	....

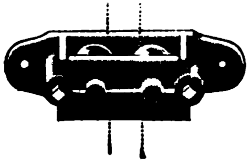


FIG. 516

GOULDS HORSE GEAR AND DOUBLE BARREL PUMP.

FOR HORSE POWER.

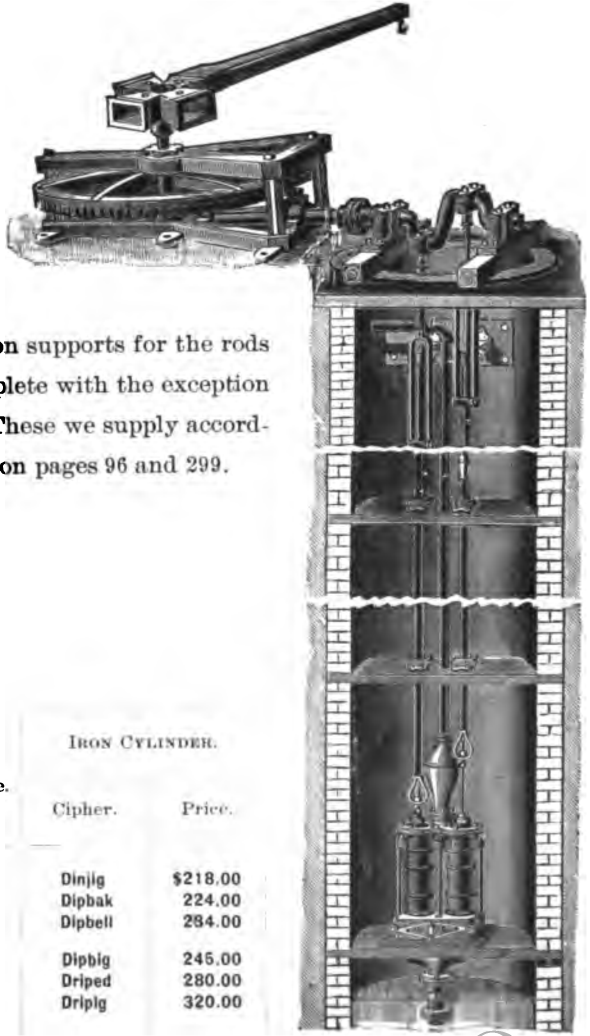


FIG. 720

Fig. 720 represents Fig. 885, our Two-Horse Gear, and Fig. 527½, Double-Barrel Pump, arranged for well pumping. The Pump is fully described on page 96; Horse Gear on page 94. As illustrated in cut, Pump should be attached to coping or planks laid across the well and a check valve should be placed in the lower end of suction pipe. Roller guides should be located about every 12 feet on supports for the rods to work through. We furnish this pumping apparatus complete with the exception of wrought-iron connecting pipes, rods and roller guides. These we supply according to depth of well at extra price, and will be found listed on pages 96 and 299.

Our table gives full information.

FIG 720. SIZES, PRICES, ETC.

Dia. Cyls.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	*Lift and Force.	Iron Cylinder.	
						Cipher.	Price.
2½ in.	10 in.	.43 gals.	1½ in. pipe.	1½ in. pipe.	150 ft.	Dinjig	$218.00
3 "	10 "	.61 "	2 "	2 "	110 "	Dipbak	224.00
3½ "	10 "	.83 "	2½ "	2½ "	80 "	Dipbell	284.00
4 "	10 "	1.09 "	2½ "	2½ "	60 "	Dipbig	245.00
5 "	10 "	1.70 "	3 "	3 "	40 "	Driped	280.00
6 "	10 "	2.45 "	3½ "	3½ "	26 "	Dripig	320.00

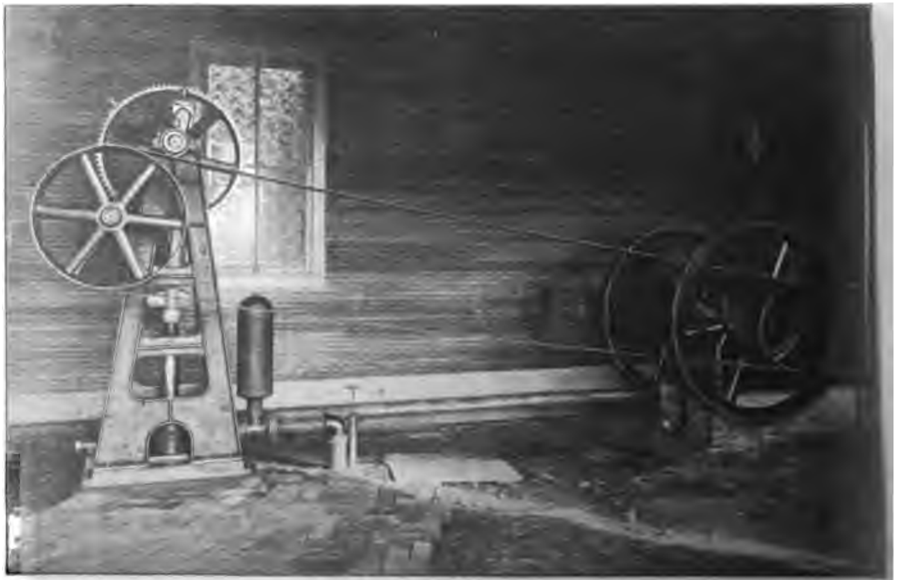
* Total lift and force from supply to point of delivery, Pump not more than 20 feet above water.

DEEP WELL PUMPING.

In some localities deep wells are depended upon for the entire supply of water; in others, deep well furnishes the only available supply of pure water.

Our illustration shows Chenoa, Ill., Deep Well Pumping Plant, operated by Gasoline Engine. This installation is a type of many power pumping plants employed to supply water to towns, cities, etc.

Our Differential Power Working Heads and Cylinders, given on pages 104 to 112 offer a wide range of capacity. We refer to our tables given in connection with each Pump, showing working depth and capacity for which they are adapted, etc.



GOULDS HAND AND POWER PUMPING APPARATUS.

WITH TIGHT AND LOOSE PULLEYS

This apparatus consists of iron bed with vertical column, which supports shaft with tight and loose pulleys, crank handle and face plate, these operating pitman and connecting rod (working through usual stuffing box), suitable for welding to plunger rod of pump cylinder in well. This can be worked by either manual or other power supplied from steam, gas or petroleum engine, if belt speed is not too high. Can tap suction for 1½-inch or 2-inch pipe, but always as below, unless otherwise ordered.

FIG. 872. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	Pulleys, Each.	*Lift and Force.	Cipher.	Price.
4, 5 or 6 in.	1½ in. pipe	1¼ in. pipe	⅝ in.	15 x 3 in.	2½ in. cyl., 50 ft. 3 " 40 "	Waxlight	$30.00

Cylinders, like Figs. 1230, 1231, pages 62 and 63, or Figs. 514½, 1192, pages 82 and 83, are required with this Pumping Apparatus, and *cost extra*.

*Depth of wells to which Pumping Apparatus may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

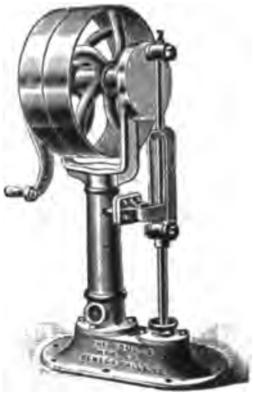


FIG. 872

GOULDS COMBINATION PUMPING HEAD.

FOR DEEP WELLS.

(Patent Applied For.)

Fig. 1280 illustrates a new Well Pump Head that we have recently designed. In this construction we offer a combination of hand, wind mill or belted Deep Well Head. We furnish a self-contained machine and do away with the cumbersome walking-beam, generally used when power is employed to operate a hand pump. Connecting rods can be easily disconnected, and so change from hand to power or wind mill at will. Gas, gasoline, steam, electricity or wind power may be applied to this head.

FIG. 1280. SIZES, PRICES, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	Gearing.	Pulleys. T. & L.	*Lift and Force.	Cipher.	Price.
Adjustable 6, 8, 10 in.	1¼, 1½ or 2 in.	1¼ in. pipe or 1 in. hose	7-16 or 1 in. Wood Rod	5 to 1	20 x 3 in.	2 in. cyl., 200 ft. 2½ " 125 " 3 " 100 "	Maltyeb	$50.00

*Depth of wells to which Pump Standard may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Cylinders, like Figs. 1230 and 1231, pages 62 and 63, are required with this Pump Standard, and *cost extra*.

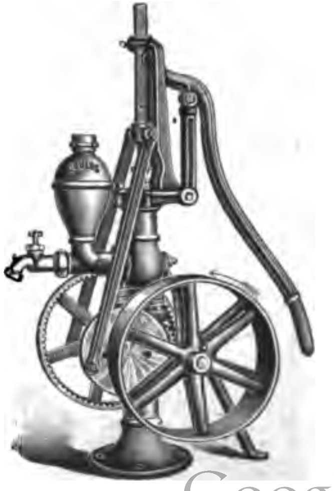


FIG. 1280

GOULDS MANUAL PUMPING APPARATUS.

WITH HEAVY FLY-WHEEL AND WINCH HANDLE.

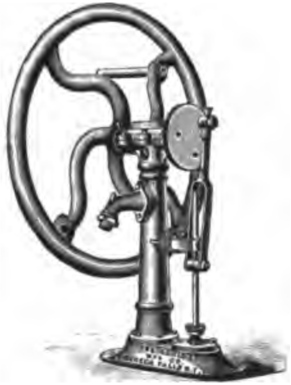


FIG. 547

This apparatus consists of heavy cast-iron bed plate and column supporting wrought-iron shaft with round rim fly-wheel affixed, face plate, steel wrist pin, pitman, guided connecting rod passing through stuffing box in bed plate and thence inside pipe connecting with pump cylinder below. It is strongly bolted together and offers a very effective and simple apparatus for raising water from wells. As shown, water is discharged through spout, but by substituting a flange for spout it can be piped to convey the water to a distance.

FIG. 547. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	Fly-Wheel.	*Lift and Force.	Cipher.	Price.
4, 5 or 6 in.	1½ in. pipe	1¼ in. pipe and 1 in. hose.	⅝ in.	36 in.	2½ in. cyl., 75 ft. 3 " 60 "	Lamp	$39.00
Same as above with air chamber……………………						Leabjud	42.00
Same as above with air chamber and cock spout……………………						Leabki	44.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, or Figs. 514½, 1192, pages 82 and 83, are required with this Pumping Apparatus and *cost extra.*

*Depth of wells to which Pumping Apparatus may be adapted by placing Cylinder within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

MANUAL AND POWER PUMPING APPARATUS.

WITH PULLEY FLY-WHEEL.

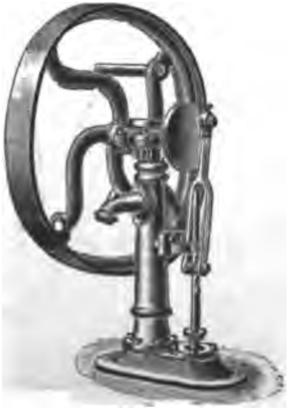


FIG 547½

Fig. 547½ is the same in all respects as Fig. 547, but with flat rim fly-wheel to be worked by manual power, or belt transmission from any of the numerous and well known gas or steam engines, under proper speed conditions. By substituting a flange for spout, pipe may be connected to convey water wherever desired.

FIG. 547½. SIZE, PRICE, ETC.

Stroke.	Suction.	Discharge.	Well Rod.	Pulley Fly-Wheel.	*Lift and Force.	Cipher.	Price.
5, 6 or 7 in.	1½ in. pipe	1¼ in. pipe and 1 in. hose.	⅝ in.	36 x 4½ in.	2½ in. cyl., 75 ft. 3 " 60 "	Lane	$41.00
Same as above with air chamber……………………						Leablow	44.00
Same as above with air chamber and cock spout……………………						Leabma	46.00

Cylinders like Figs. 1230, 1231, pages 62 and 63, or Figs. 514½, 1192, pages 82 and 83, are required with this Pumping Apparatus and *cost extra.*

*Depth of wells to which Pumping Apparatus may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS POWER PUMPING APPARATUS.

WITH TIGHT AND LOOSE PULLEYS.

Fig. 589 represents our Pumping Apparatus for power only. The pinion shaft is made extra heavy and long enough to carry tight and loose pulleys, the size of which can be changed to meet any special requirements. An out-board bearing is not essential for the ordinary range of service, but in some cases it may be advantageous. Gear and pinion are all best steel with machine-cut teeth. Gas, steam, oil or electric power may be employed to operate these pumps.

FIG. 589. SIZES, PRICES, ETC.

Stroke.	Suction.	Well Rod.	Geared.	Pulleys Each.	*Lift and Force.	Cipher.	Price.
6 in.	1½ in. pipe.	⅝ in.	3 to 1	20 x 3 in.	2½ in. Cylinder, 125 feet. 3 " " 100 " 3½ " " 60 " 4 " " 45 " 4½ " " 30 "	Warping	$68.00
Same as above with air chamber..........						Warplume	71.00
Same as above with air chamber and cock spout..........						Warproof	73.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, or Figs. 514½ and 1192, pages 82 and 83, are required for this Pumping Apparatus and *cost extra.*

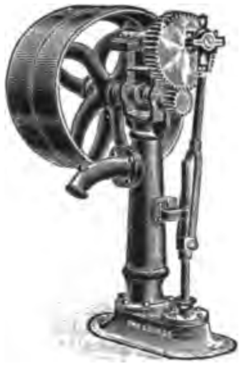


FIG. 589.

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* Depth of Wells to which Pumping Apparatus may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS MANUAL AND POWER PUMPING APPARATUS.

WITH GEAR AND PINION.

Figs. 888 shows our Manual and Power Pumping Apparatus with gear and pinion, and cock spout with air chamber on same. The main gear and pinion are made of best steel with machine-cut teeth, well fitted, bright finished, and work with minimum friction. Water can be forced upward through top of air chamber or drawn through the spout.

FIG. 888. SIZE, PRICE, ETC.

Stroke.	Suction Fitted for.	Well Rod.	Geared.	Pulley Fly-Wheel.	*Lift and Force.	Cipher.	Price.
6 in.	1½ in. pipe.	⅝ in.	3 to 1	36 x 4½ in.	2½ in. Cylinder, 125 feet. 3 " " 100 " 3½ " " 60 " 4 " " 45 " 4½ " " 30 "	Vexil	$70.00
Same as above with air chamber, no cock..........						Leabnug	68.00
Same as above without air chamber or cock spout..........						Lenado	65.00

Cylinders like Figs. 1230 and 1231, pages 62 and 63, or Figs. 514½, 1192, pages 82 and 83, are required for this Pumping Apparatus and *cost extra.*

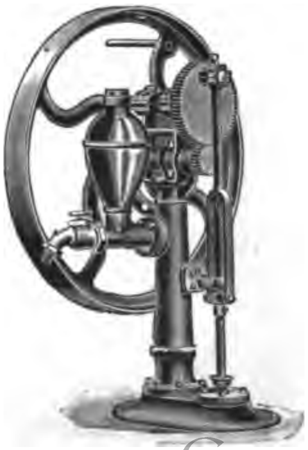

FIG. 888.

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* Depth of Wells to which Pumping Apparatus may be adapted by placing Cylinders within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

GOULDS OVERHEAD COUNTER SHAFT.

FOR OPERATING POWER PUMPS.

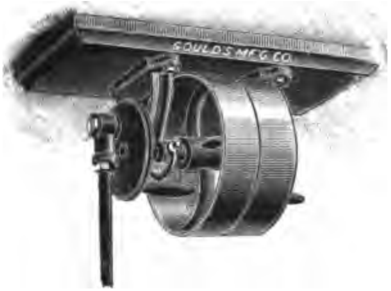

FIG. 711

Fig. 711 represents a light Counter Shaft, consisting of hangers, tight and loose pulleys, face plate, wrist pin and stub rod for driving any of our smaller Power Pumps, such as Fig. 279, page 129, or Cylinders, pages 62 to 69.

Can change sizes of pulleys enumerated in our tables to meet requirements, at proportionate prices.

FIG. 711 SIZES, PRICES, ETC.

No.	Stroke.	Drop of Hanger.	Pulleys, Each.	*Will Operate.	Cipher.	Price.
1	6 in. 8 "	12 in.	16 x 3½ in.	4 in. cyl., 55 ft. 5 " 25 "	Syrup	$30.00
2	6 " 8 "	12 "	18 x 4 "	4 " 70 " 5 " 50 "	Sythe	35.00
3	6 " 8 " 10 "	12 "	22 x 5 "	4 " 100 " 5 " 75 " 6 " 25 "	Table	45.00

*Smaller Cylinders proportionately deeper.

GOULDS OVERHEAD GEARED COUNTER SHAFT.

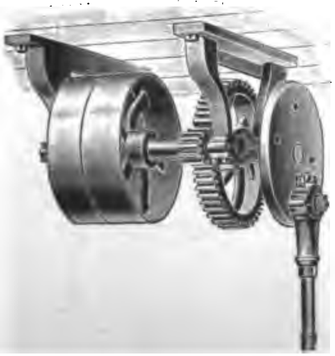

FIG. 650½

Fig. 650½ represents our Overhead Geared Counter Shaft with plummer blocks, tight and loose pulleys, face plate with pin for varying stroke, connecting rod for driving Power Pumps such as Figs. 714, 514½, 526½, 279, 1212, or Cylinders as shown on pages 62 to 69, etc. We make this Counter Shaft in the shorter strokes only, but can fully recommend for duty specified in our table below. Gears are machine cut. Prices do not include wood frame.

FIG. 650½. SIZES, PRICES, ETC.

No.	Stroke.	Diameter Large Gear.	Diameter Small Gear.	Face of Gears.	Pulleys, Each.	Will Operate.	Cipher.	Price.
1	10 in.	12 in.	4 in.	2½ in.	14 x 4 in.	4 in. cyl., 90 ft.	Beater	$50.00
1A	12, 14 or 16 in.	12 "	4 "	2½ "	14 x 4 "	4 " 60 "	Casem	60.00

GOULDS GEARED COUNTER SHAFT.

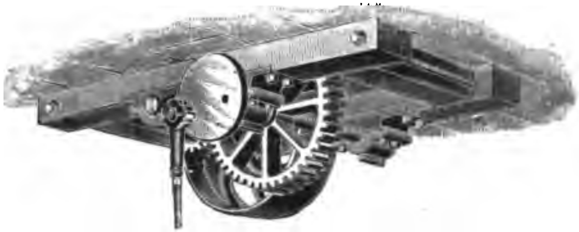

FIG. 650

Fig. 650 represents our Overhead Geared Counter Shaft, mounted on heavy oak frame, with wrought-iron stay rods, ready for putting in place. Counter Shaft has machine-cut spur and pinion gears, plummer blocks, tight and loose pulleys, face plate with pin for varying stroke and stub connecting rod.

This Counter Shaft is very powerful and well made, and can be relied upon for satisfaction during a long period of most exacting service. Upper engraving shows Counter Shaft attached to ceiling; lower engraving as placed over open well. For *Pumps* to be operated by Counter Shaft we recommend:

Figs. 514½, 339, 526½, 279, 1212 (See index for pages).

For *Cylinders* we refer to:

Figs. 1230, 1064, 1135, 904—especially the two latter.

For *Working-Heads* to use in combination with above *Cylinders* for forcing water we recommend:

Figs, 978, 979, 446, 1127.

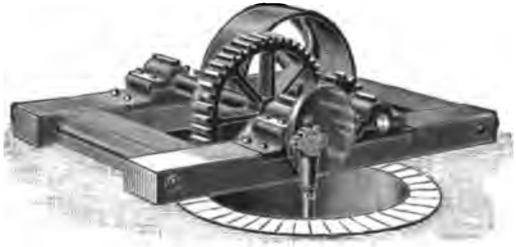

FIG 650

FIG. 650. SIZES, PRICES, ETC.

No.	Stroke.	Dia. Large Gear.	Dia. Small Gear.	Face of Gears.	Pulleys, Each.	* Will Operate.	Cipher.	Price.
2	10 in.	22 in.	7¾ in.	3½ in.	22 x 5½ in.	2¼ in. cyl., 300 ft.	Beef	$125.00
2A	12, 16 or 18 in.	22 "	7¾ "	3½ "	22 x 5½ "	3¼ " 200 "	Cason	140.00
2B	20, 22 or 24 "	22 "	7¾ "	3½ "	22 x 5½ "	4¾ " 150 "	Casort	150.00
2C	26, 28 or 30 "	22 "	7¾ "	3½ "	22 x 5½ "	5¾ " 75 "	Chestad	160.00

* **Working Heads** are practically strong enough to operate any suitable **Pumps** to such depth as they are adapted; this is told in connection with **Pumps** to which we refer.

GOULDS DIFFERENTIAL POWER WORKING HEAD.

For Operating Single-Acting Deep Well Cylinder.

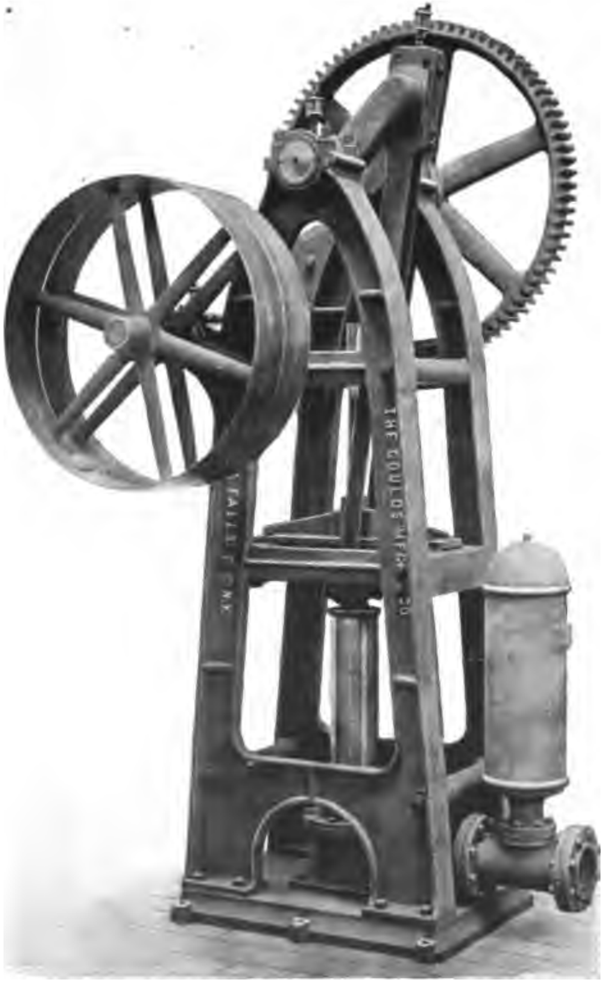

Fig. 971 A. 24" Stroke

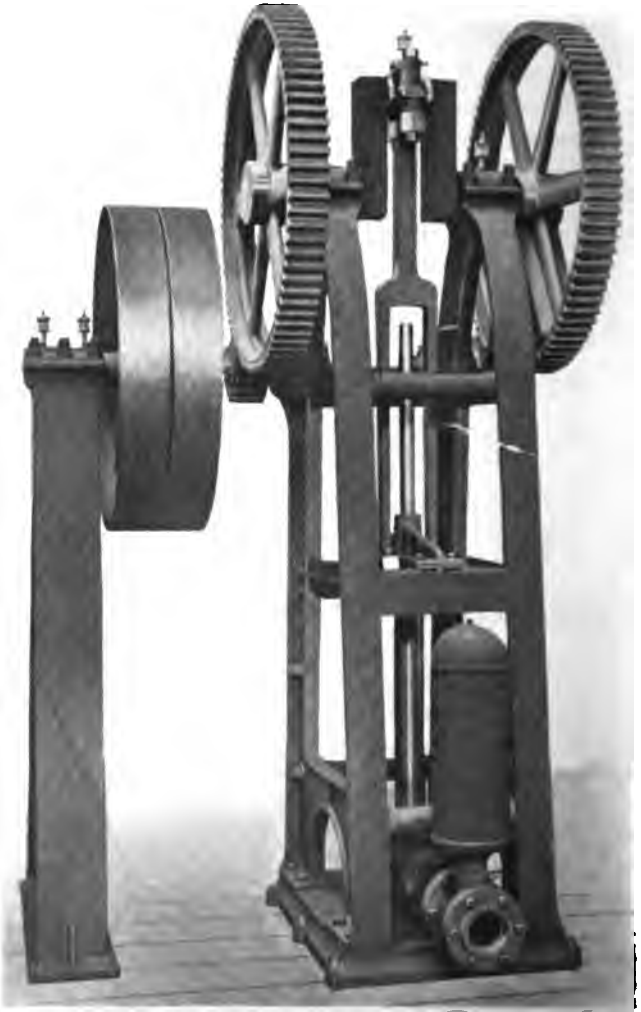

Fig. 971 C. 24" Stroke

GOULDS DIFFERENTIAL POWER WORKING HEAD.

FOR OPERATING SINGLE-ACTING DEEP WELL CYLINDERS.

Fig. 971, 16-inch and Fig. 971 A, 24-inch Stroke Power Working Heads, have substantial bed-plate, to which the discharge piece and frame are bolted. The differential plunger effects a constant flow and smooth running. The crank pin bearing has strap head with adjustable bronze box. The gear and pinion are machine cut. Tight and loose pulleys are regularly supplied for belt drive from any source of power.

Fig. 971 B, 24-inch Stroke, is the same as Fig. 971 A, 24-inch Stroke, except that it carries heavier gearing, adapting it for deeper wells.

Fig. 971 C, 24-inch Stroke, has double gears, with extended pinion shaft, carrying tight and loose pulleys and supported by outboard bearing. Connecting rod is forged steel with bronze marine head. This construction adapts Working Head for operating Cylinders in very deep wells, as shown in our tables.

Fig. 904, Brass Deep Well Cylinder, is designed to be used with this type of Working Head. Description Fig. 904 on page 68; Wood Rod, Couplings, etc., page 70.

Complete catalogue of Power Working Heads sent upon request.

FIG. 971. SINGLE-ACTING WORKING HEAD. SIZES, ETC.

Stroke.	MAXIMUM SIZE OF PIPE.		Geared.	Pulleys. Tight and Loose.	Cipher.
	Connecting.	Discharge.			
16 in.	8 in.	4 in.	5 to 1	30 x 6 in.	Writ
24 " A	8 "	5 "	5 to 1	36 x 6 "	Hendafa
24 " B	8 "	5 "	5 to 1	36 x 8 "	Hendago
24 " C	8 "	5 "	5 to 1	48 x 8 "	Hendaho

FIG. 904. SINGLE-ACTING DEEP WELL CYLINDER. SIZES, CAPACITIES, PRICES, ETC.

See pages 68 and 69 for size pipe, wood rod, etc., to use with these Cylinders.

Fig. 904 Diameter and Stroke.	Capacity per Stroke.	Usual Speed and Capacity per Minute.	*DEPTH OF WELL IN WHICH FIG. 971 WILL OPERATE FIG. 904 CYLINDERS.				Cipher.	All-Brass.
			16-In.	24-In., A.	24-In., B.	24-In., C.		
3¼ x 16 in.	.57 gals.	30 revs., 17 gals.	450 ft.	....	....	....	Whim	$48.00
3¼ x 24 "	.86 "	25 " 21 "	....	450 ft.	....	....	Whine	52.00
3¾ x 16 "	.76 "	30 " 22 "	400 ft.	....	....	....	Zylonkk	70.00
3¾ x 24 "	1.15 "	25 " 28 "	....	400 ft.	....	....	Whiners	75.00
4¼ x 16 "	.98 "	30 " 29 "	350 ft.	....	....	....	Zylonie	90.00
4¼ x 24 "	1.47 "	25 " 36 "	....	350 ft.	....	....	Whinny	95.00
4¾ x 16 "	1.23 "	30 " 36 "	300 ft.	....	....	....	Zylonm	127.50
4¾ x 24 "	1.84 "	25 " 46 "	....	300 ft.	375 ft.	....	Whippe	135.00
5¾ x [illegible] "	1.80 "	30 " 53 "	200 ft.	....	....	....	Zylonna	180.00
5¾ x [illegible] "	2.70 "	25 " 67 "	....	200 ft.	250 ft.	400 ft.	Dufebl	195.00
[illegible] "	2.50 "	30 " 74 "	150 ft.	....	....	....	Gra iew	280.00
[illegible] "	3.72 "	25 " 92 "	....	150 ft.	200 ft.	300 ft.	Gratifa	300.00
[illegible] "	3.26 "	30 " 97 "	125 ft.	....	....	....	Zylonoc	425.00
[illegible] "	4.90 "	25 " 122 "	....	125 ft.	160 ft.	250 ft.	Willri	450.00
[illegible] "	4.16 "	30 " 124 "	100 ft.	....	....	....	Gratljo	685.00
[illegible] "	6.20 "	25 " 156 "	....	100 ft.	125 ft.	200 ft.	Groomug	725.00

*[illegible] water in well to point of delivery.

GOULDS DIFFERENTIAL POWER WORKING HEAD.

FOR OPERATING SINGLE-ACTING DEEP WELL CYLINDER.

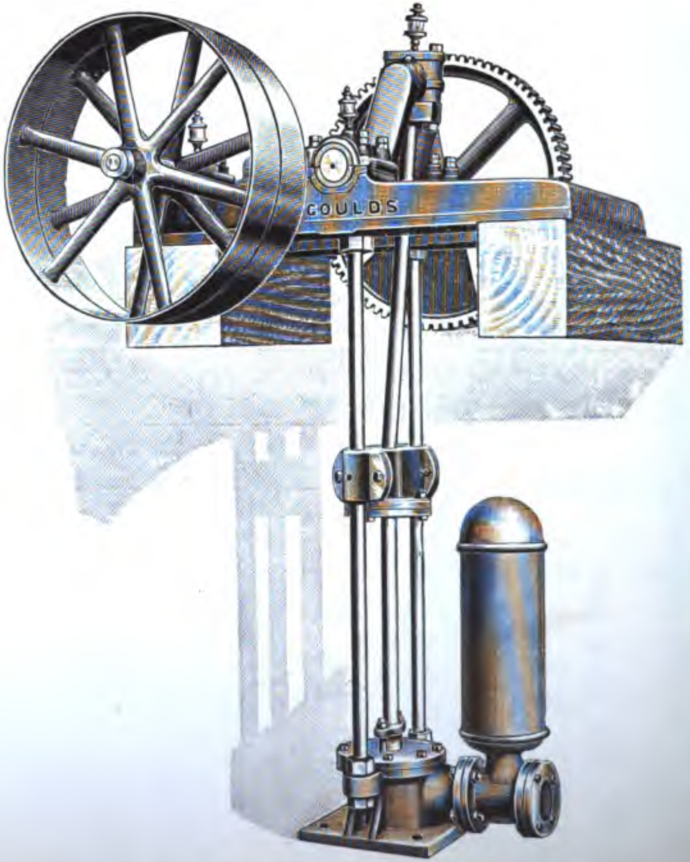

FIG. 1191, 24" STROKE.

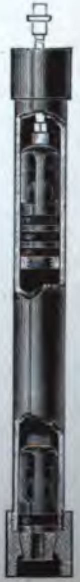

FIG. 904.

GOULDS DIFFERENTIAL POWER WORKING HEAD.

FOR OPERATING SINGLE-ACTING DEEP WELL CYLINDER.

In Fig. 1191, Differential Working Head, the driving mechanism is located down close to the top of the well and the discharge piece in a pit below.

It is built heavy and strong and it is powerfully geared. The gearing is machine-cut. Tight and loose pulleys. The bearings are all very liberally proportioned. The bed plate is a massive casting in one piece, forming a stable foundation for and preserving true alignment of the driving mechanism.

We offer in 24-inch and 36-inch stroke, adapted for working limits given in our table.

Fig. 904, Single-Acting Deep Well Cylinder, is used with this type of Working Head.

The size of Deep Well Pump to be selected for any well is governed by the quantity of water required, the inside diameter and the depth of the well.

We recommend the use of wood sucker rod with forged couplings.

FIG. 1191. SINGLE-ACTING WORKING HEAD. SIZES, ETC.

Stroke.	Maximum Size of Pipe.		Geared.	Pulleys, Tight and Loose.	Cipher.
	Connecting.	Discharge.			
24 in.	8 in.	4 in.	5 to 1	36 x 6 in.	Woldec
36 "	12 "	6 "	6 to 1	48 x 12 "	Maulfa

FIG. 904. SINGLE-ACTING DEEP WELL CYLINDER. SIZES, CAPACITIES, PRICES, ETC.

See pages 68 and 69 for size pipe, wood rod, etc., to use with these Cylinders.

Fig. 904 Diameter and Stroke.	Capacity per Stroke.	Usual Speed and Capacity per Minute.	*Depth of well in which Fig. 904 Cylinder can be operated by Fig. 1191.		Cipher.	All Brass.
			24-in. Stroke.	36-in. Stroke.		
3¼ x 24	.86 gals.	25 revs.— 21 gals.	450 ft.	....	Whine	$52.00
3¾ x 24	1.14 "	25 " 28 "	400 "	....	Whiners	75.00
4¼ x 24	1.47 "	25 " 36 "	350 "	....	Whinny	95.00
4¾ x 24	1.84 "	25 " 46 "	300 "	....	Whippe	135.00
5¾ x 24	2.69 "	25 " 67 "	200 "	....	Dufebi	195.00
7¾ x 24	4.9 "	25 " 122 "	125 "	....	Willri	450.00
7¾ x 36	7.34 "	20 " 147 "	....	550 ft.	Willga	500.00
8¾ x 36	9.36 "	20 " 187 "	....	475 "	Groomwo	800.00
9½ x 36	11.02 "	20 " 220 "	....	350 "	Mamoz	1,000.00
11½ x 36	16.16 "	20 " 323 "	....	225 "	Mamut	1,250.00

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* Vertical height from surface of water in well to point of delivery.

GOULDS DOUBLE-ACTING WORKING HEAD AND PUMP.

FOR DEEP WELLS.

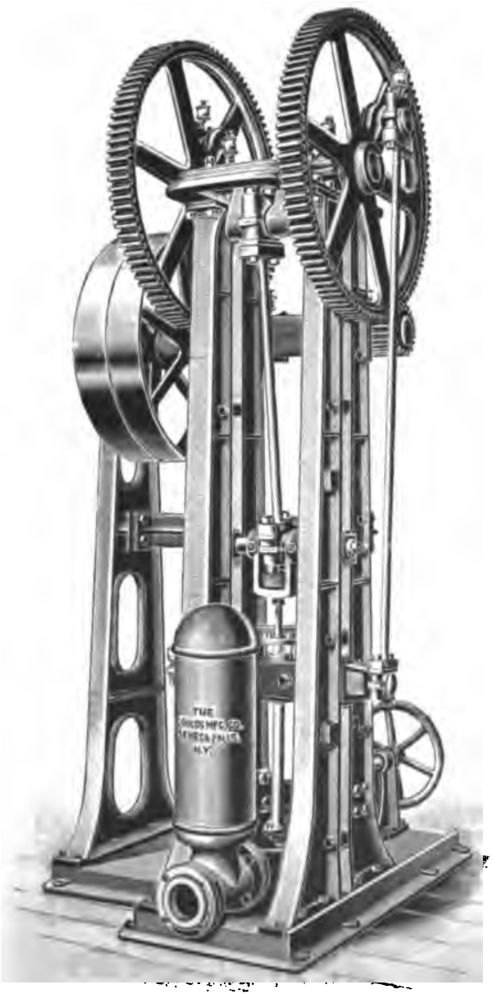


FIG. 1087A; 18" STROKE.

The Double-Acting Deep Well Pump delivers more water from a cased well of a given size than the Single-Acting Pump, as there are two pistons constantly working instead of one.

Fig. 1087, Double-Acting Working Head, is mounted on a heavy base plate, which forms a substantial foundation, preserves the accurate alignment of all the working parts, and insures easy running and great durability.

There are two piston rods and two crossheads. The outer rod is a specially made tube and is driven by the lower crosshead; the inner rod is solid, reciprocating through the outer rod, and driven by the upper crosshead. The two outside connecting rods are attached to crank pins in arms of the gears and to the lower crosshead. The inner connecting rod is attached to the crank of the main shaft, directly opposite the outer crank pins (*i. e* , 180 degrees apart) and the upper crosshead. There are tight and loose pulleys on the pinion shaft, which is extended and supported by an outboard bearing. Provision is made for drawing back the Working Head, leaving the well clear for inspection and removal of the piston rods and pistons.

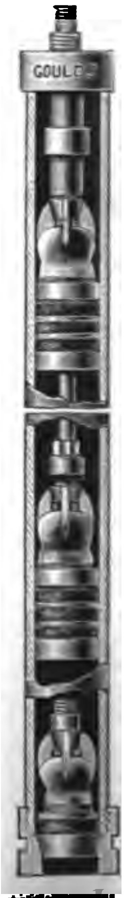


Fig. 1088, Double-Acting Deep Well Pump, contains the foot valve, and above this are two pistons, which are actuated by separate piston rods driven by the double-acting working head.

The Cylinder, Pistons and Valves are a special design, which insures a maximum delivery of water with the least expenditure of power, the valves being so designed that they provide an unobstructed waterway with the least possible slip.

The Working Head has double gears, machine cut. The connecting rods are forged steel. The crank and crosshead pins have adjustable bronze boxes of the marine type. The pinion and crank shafts run in adjustable babbitt-lined bearings. The crossheads are iron and steel and have adjustable bronze shoes. The piston rods are brass and steel tubing and solid polished steel, with stuffing boxes of bronze.

The pump cylinder is made of seamless brass tubing. The pistons are of bronze and fitted with cup leather packings. The valves in the pistons and the foot valve are of bronze. Great care is taken to secure the joints of the piston rods from all liability of loosening, and a special check device holds the cup leathers in place. All parts are made to standard gauges and are strictly interchangeable.

In our tables below we give safe working limits for several forms of Working Heads.

FIG. 1087. DOUBLE-ACTING WORKING HEAD, SIZES, ETC.

Stroke.	Maximum Size of Pipe.		Geared.	Tight and Loose Pulleys.	Cipher.
	Connecting.	Discharge.			
18 in. A	8 in.	4 in.	6 to 1	36 x 6 in.	Wryafi
18 " B	10 "	5 "	6 to 1	42 x 10 "	Mauigu
18 " C	12 "	6 "	6 to 1	48 x 12 "	Maulhy

FIG. 1088. DOUBLE-ACTING DEEP WELL PUMP. SIZES, CAPACITIES, ETC.

Fig. 1088. Dia. and Stroke.	Capacity One Rev. of Crank Shaft.	Usual Speed and Capacity per Minute.	*Depth of Well Head Will Operate Cylinders.			Connecting Pipe.	Maximum Outside Diameter.	Cipher.
			18 In. A.	18 In. B.	18 In. C.			
3½ x 18 in.	1.52 gals.	25 revs., 43 gals.	500 ft.	....	....	4 in.	5⅛ in.	Wryall
4½ x 18 "	2.56 "	25 " 69 "	425 "	....	....	5 "	6⅜ "	Wryaka
5¾ x 18 "	4.04 "	25 " 101 "	325 "	600 ft.	....	6 "	7⅜ "	Wryalm
6¾ x 18 "	5.56 "	25 " 139 "	200 "	400 "	....	7 "	8⅜ "	Wryamd
7¾ x 18 "	7.34 "	25 " 183 "	150 "	275 "	550 ft.	8 "	9⅜ "	Wryane
8¾ x 18 "	....	....	....	225 "	475 "	9 "	11 "	Mearul
9½ x 18 "	....	....	....	175 "	350 "	10 "	12 "	Meshot
11½ x 18 "	....	....	....	....	225 "	12 "	14 "	Meshown

*Depth of the well from surface of water supply to point of delivery.

GOULDS TRIPLEX POWER PUMP.

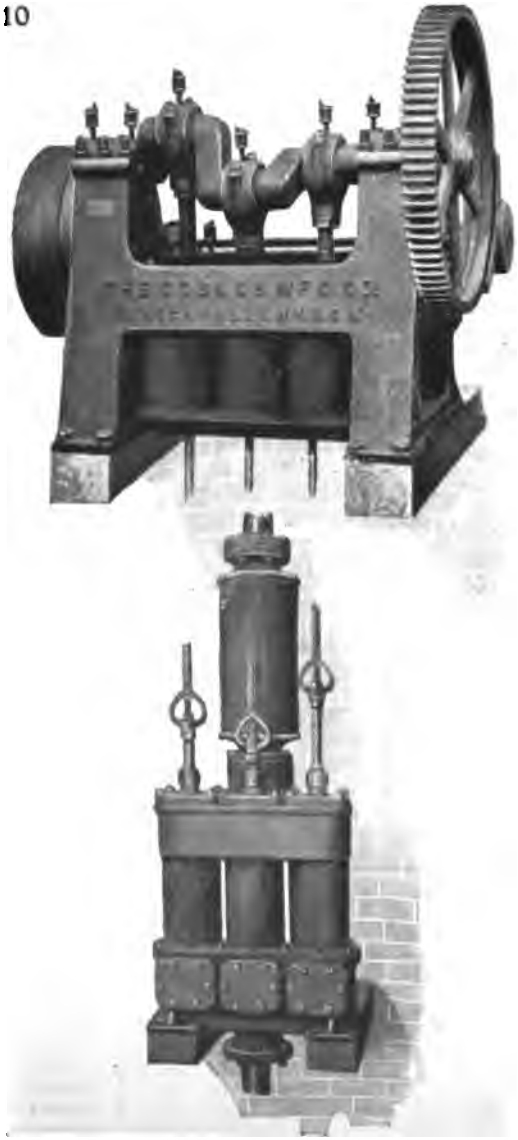


FIG. 1062 SIZE 6½" X 8"

FOR DEEP OPEN WELLS.

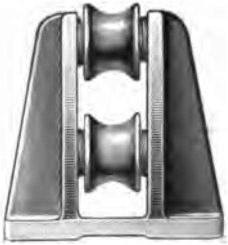


FIG. 1251. DOUBLE ROD GUIDE.

Adapted to	Size Rod.	Fig. 1251. Double Roller Guide.	Welding Stub.	Rods and Couplings.
Fig. 1062—5 x 8 in......	1¼ in.	$2.00	$2.50	$0.65 per ft.
" 1062—6½ x 8 "......	1½ "	2.25	2.75	.75 "
" 1062—8 x 10 "......	1¾ "	2.50	3.00	.85 "
" 1262—8½ x 12 "......	1¾ "	3.00	3.75	1.00 "

GOULDS TRIPLEX POWER PUMP FOR DEEP OPEN WELLS.

FOR ELEVATIONS TO 300 FEET, EQUIVALENT TO 130 POUNDS PRESSURE.

Fig. 1062, Triplex Power Pump, is used in open wells and pits, where the water is too low to be reached by suction from the surface, and in localities where floods are liable to submerge Pumps placed within suction limits in the ordinary stages of the water.

The Frame, which contains the driving parts of the Pump, is on the surface, where attention is easily given. In this construction the cross head guides are cast in the frame, and do not need to be supported or brought into alignment in the well.

The cylinders, plungers and valve chests are built in one self-contained part, which is supported by beams in the well. The connecting rods, guides, etc., vary according to the depth.

In construction, materials and workmanship the Pump is first class. The gearing is machine-cut, bearings are of bronze or babbitt, adjustable, and easily renewed.

Fig. 1262, Triplex Power Pump (not illustrated), is designed for same service as Fig. 1062, above described, for elevations to 350 feet, equivalent to 150 pounds pressure. It is built with single throw crank shaft, operating the centre connecting rod, and having driving gears at each end with wrist pins and two outside connecting rods—cross heads are outside guided. Our tables indicate the working limit. Further details upon request. Brass fitted Pumps built to order.

FIG. 1062. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Sizes of Tension Rods.	Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.				
5 in.	8 in.	2.0 Gals.	35 Revs.— 70 Gals.	3 in.	3 in.	1¼ in.	5 to 1	30 x 5 in.	Elbem
6½ "	8 "	3.4 "	35 " —119 "	4 "	4 "	1½ "	5 to 1	30 x 6 "	Elbend
8 "	10 "	6.5 "	35 " —227 "	5 "	5 "	1¾ "	5 to 1	42 x 6 "	Elbida

FIG. 1262. SIZE, CAPACITY, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	SIZE OF PIPE.		Size of Tension Rod.	Geared.	Tight and Loose Pulleys.	Cipher
Diameter.	Stroke.			Suction.	Discharge.				
8½ in.	12 in.	8.8 Gals.	35 Revs.—308 Gals.	7 in.	8 in.	1¾ in.	5.6 to 1	36 x 12 in.	Mamic

GOULDS DIFFERENTIAL POWER WORKING HEAD.

FOR OPERATING SINGLE-ACTING DEEP WELL CYLINDER.

Fig. 1030 is a neat, strong, Working Head; serviceable, convenient and easy to keep in running order. The design is similar to Fig. 971, pages 104 and 105. It has tight and loose pulleys, machine-cut gear and pinion, and a differential plunger, which causes the water to flow from the well in a continuous stream.

Fig. 904, Brass Deep Well Pump, is especially designed to be used with this type of Working Head. See pages 68 and 69 for complete description.

Selection of Deep Well Pump will be governed by quantity of water required, bore and depth of well. We recommend the use of wood sucker rod with forged couplings, page 70. Air chamber for discharge of Fig. 1030 furnished at $7.50 extra list.

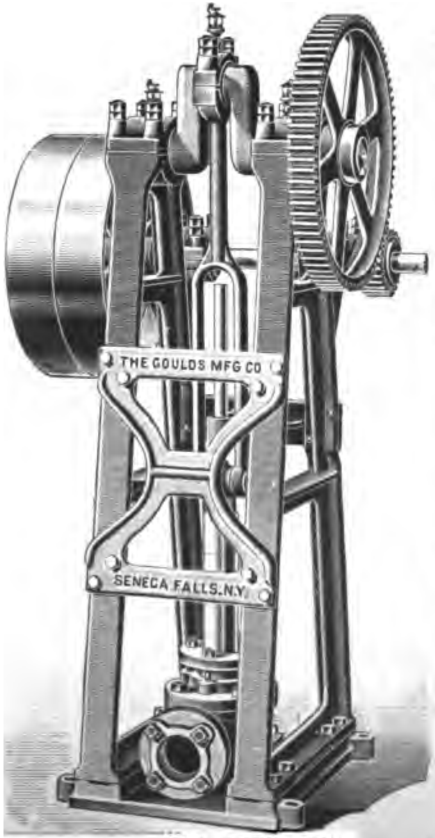


FIG. 1030. 10"

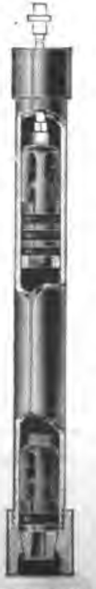


FIG. 904

FIG. 1030. SINGLE-ACTING WORKING HEAD, SIZE, ETC.

Stroke.	Maximum Size of Pipe. Connecting.	Maximum Size of Pipe. Discharge.	Geared.	Tight and Loose Pulleys.	Cipher.	Price.
6 in.	4½ in.	3 in.	5 to 1	20 x 3 in.	Veerao	$90.00
10 "	6 "	3 "	4 to 1	20 x 4 "	Vatful	120.00
14 "	6 "	3 "	5 to 1	26 x 4 "	Vaunted	180.00
16 "	6 "	3 "	5 to 1	26 x 4 "	Vectutd	200.00

FIG. 904. BRASS DEEP WELL PUMP. SIZES, CAPACITIES, ETC.

Fig. 904. Dia. and Stroke.	*Fig. 1030. Will Operate in Wells.	Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.		Top and Bottom Connecting Pipe.	Maximum Outside Diameter.	Square Wood Sucker Rod.	Cipher.	All Brass.
2¾ x 6 in.	200 ft.	.154 gals.	35 revs.,	5.4 gals.	3 in.	3⅞ in.	1½ in.	Dumpuy	$34.00
2¾ x 10 "	275 "	.257 "	35 "	9. "	3 "	3⅞ "	1½ "	Dumpuy	34.00
2¾ x 14 "	275 "	.359 "	30 "	10.77 "	3 "	3⅞ "	1½ "	Endmoub	36.00
2¾ x 16 "	275 "	.411 "	30 "	12.33 "	3 "	3⅞ "	1½ "	Whilom	36.00
3¼ x 6 "	150 "	.215 "	35 "	7.5 "	3½ "	4½ "	2 "	Dumpyb	45.00
3¼ x 10 "	200 "	.359 "	35 "	12.5 "	3½ "	4½ "	2 "	Dumpyb	45.00
3¼ x 14 "	200 "	.503 "	30 "	15.0 "	3½ "	4½ "	2 "	Endmove	48.00
3¼ x 16 "	200 "	.574 "	30 "	17.2 "	3½ "	4½ "	2 "	Whim	48.00
3¾ x 6 "	100 "	.286 "	35 "	10. "	4 "	5⅛ "	2¼ "	Dumqeel	67.50
3¾ x 10 "	150 "	.478 "	35 "	16.7 "	4 "	5⅛ "	2¼ "	Dumqeel	67.50
3¾ x 14 "	150 "	.669 "	30 "	20.6 "	4 "	5⅛ "	2¼ "	Endmuba	[illegible]
3¾ x 16 "	150 "	.764 "	30 "	22.92 "	4 "	5⅛ "	2¼ "	Zylonkk	70.00
4¼ x 6 "	75 "	.368 "	85 "	12.8 "	4½ "	5¾ "	2½ "	Dumqued	87.50
4¼ x 10 "	120 "	.614 "	35 "	21.4 "	4½ "	5¾ "	2½ "	Dumqued	87.50
4¼ x 14 "	120 "	.859 "	30 "	25.7 "	4½ "	5¾ "	2½ "	Endmud	90.00
4¼ x 16 "	120 "	.982 "	30 "	29.4 "	4½ "	5¾ "	2½ "	Zylonle	90.00
4¾ x 6 "	60 "	.46 "	35 "	16.1 "	5 "	6¼ "	3 "	Dumquil	120.0
4¾ x 10 "	100 "	7.67 "	35 "	26.8 "	5 "	6¼ "	3 "	Dumquil	120.0
4¾ x 14 "	100 "	1.073 "	30 "	32.1 "	5 "	6¼ "	3 "	Endmuek	127.5
4¾ x 16 "	100 "	1.227 "	30 "	36.6 "	5 "	6¼ "	3 "	Zylonm	127.5
5¾ x 6 "	40 "	.67 "	35 "	23.4 "	6 "	7¼ "	3½ "	Dubame	172.5
5¾ x 10 "	70 "	1.12 "	35 "	39.2 "	6 "	7¼ "	3½ "	Dubame	172.5
5¾ x 14 "	70 "	1.57 "	30 "	47.1 "	6 "	7¼ "	3½ "	Endnab	180.0
5¾ x 16 "	70 "	1.79 "	30 "	53.7 "	6 "	7¼ "	3½ "	Zylonna	180.0

*From surface of water in well to point of delivery.

DEEP WELL STEAM PUMPING ENGINE.

WITH BRASS DISPLACEMENT PLUNGER.

These Engines are adapted for non-flowing, Artesian, tubular, bored, dug or driven wells. They are constructed so as to insure a steady flow of water, whether raised from shallow or deep wells, there being separate adjustments for the upward and downward strokes; therefore a perfect travel of piston is obtained, without regard to the weight of the reciprocating parts.

The Valve Gear governing the operation of the Engine is not connected with the auxiliary piston or valve, and has no upward or downward movement, consequently the weight of the piston and valve rod, to which the tappets are attached, are not dependent upon the action of the steam to govern their relative positions to that of the main piston at different points of the stroke.

The breaking of the pump poles, due to the sudden reversal motion, is avoided in our Deep Well Engines, as the adjustment can be so made that the reversal motion will be slow and easy at either end, thus allowing the Pump to properly fill.

Sight Feed Lubricator, Drain Cocks, Plugs and Spanner Wrench are furnished with each outfit.

FIG. 1057. SIZES, PRICES, ETC.

Steam Cyl.		Steam Pipe.	Exhaust Pipe.	Steam End Only.	
Dia.	Stroke.			Cipher.	Price.
5 in.	24 in.	¾ in.	1 in.	Mobaca	$225.00
5 "	36 "	¾ "	1 "	Mobadu	250.00
6 "	24 "	1 "	1¼ "	Mobafs	250.00
6 "	36 "	1 "	1¼ "	Mobago	300.00
7 "	24 "	1¼ "	1½ "	Mobick	300.00
7 "	36 "	1¼ "	1½ "	Mobopa	315.00
8 "	24 "	1¼ "	1½ "	Moboqu	315.00
8 "	36 "	1¼ "	1½ "	Mobuda	325.00
9 "	24 "	1½ "	2 "	Mobuel	325.00
9 "	36 "	1½ "	2 "	Mobufu	350.00
10 "	24 "	1½ "	2 "	Mobugs	350.00
10 "	36 "	1½ "	2 "	Mobulm	375.00
11 "	24 "	2 "	2½ "	Mobujg	415.00
11 "	36 "	2 "	2½ "	Mobuka	450.00
12 "	24 "	2 "	2½ "	Mobulm	450.00
12 "	36 "	2 "	2½ "	Mobumo	500.00
14 "	24 "	2 "	2½ "	Mobund	675.00
14 "	36 "	2 "	2½ "	Moburt	750.00

SIZES AND PRICES.

COMBINED AIR CHAMBER AND DISCHARGE CHECK VALVE.

Size Well.	Size Check Valve.	Price.
3 in. and smaller	2 in.	$12.00
3½ " "	2½ "	14.00
4 " "	2½ "	14.00
4½ " "	3 "	16.25
5 " "	3 "	16.25
6 " "	3½ "	21.00
7 " "	3½ "	21.00
8 " "	4 "	24.50
10 " "	5 "	27.00

For Cylinders, Rods, Couplings, etc., to use with this Steam Head, see pages 67-70.

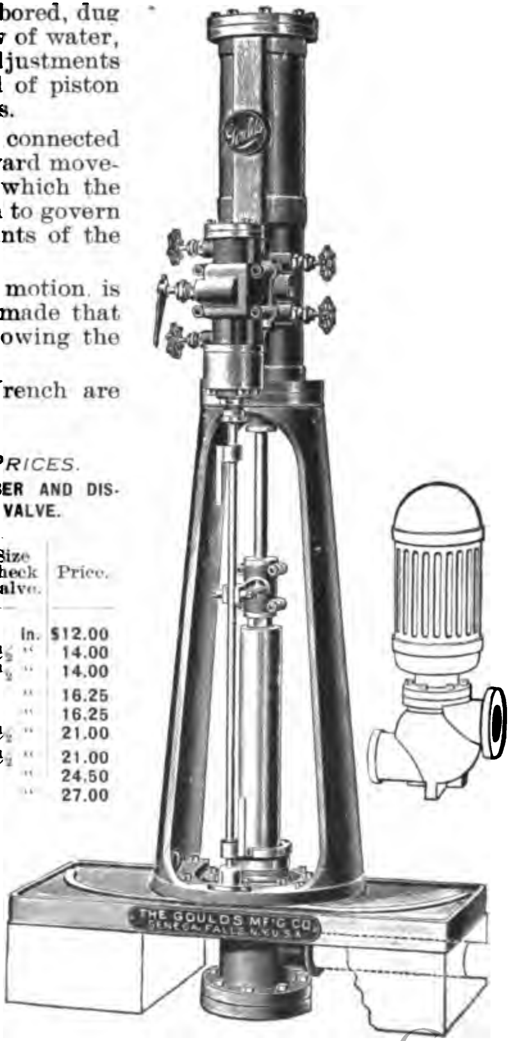
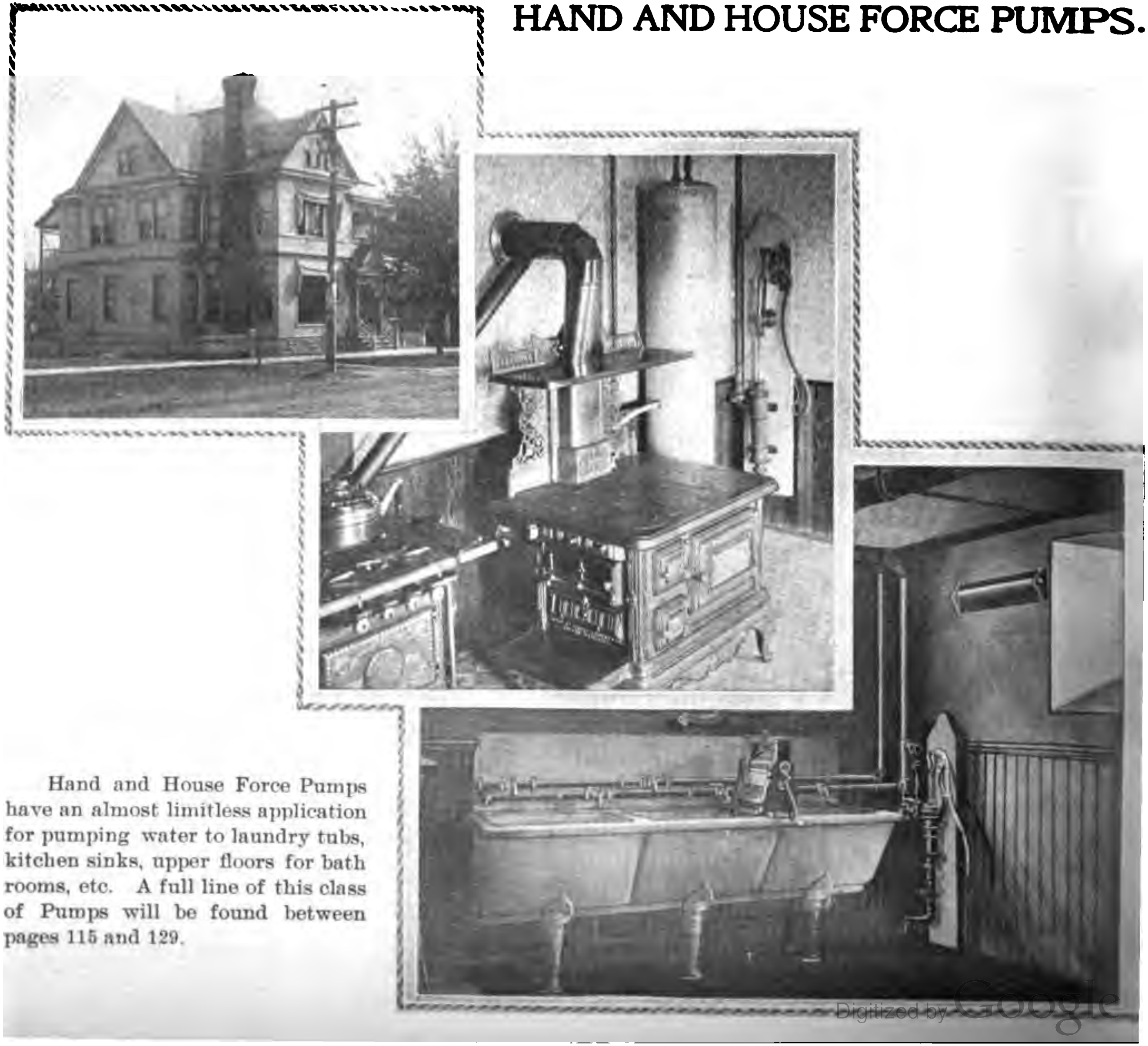


FIG. 1057.

HAND AND HOUSE FORCE PUMPS.



Hand and House Force Pumps have an almost limitless application for pumping water to laundry tubs, kitchen sinks, upper floors for bath rooms, etc. A full line of this class of Pumps will be found between pages 115 and 129.

GOULDS HOUSE FORCE PUMPS.

WITH CHECK VALVE AND REVOLVING FULCRUM

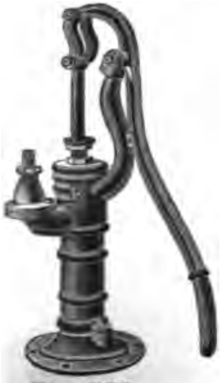


FIG. 390

Fig. 390 represents our House Force Pump on base with upper check valve discharge. It has brass-cased piston rod, working through brass gland and attached to lever by links.

Fig. 391 represents our House Force Pump on plank, with upper check valve discharge. It has brass-cased piston rod, working through brass gland and attached to lever by links. Pump furnished without plank at fifty cents less list. These figures represent a very popular style of Force Pumps for house use over sink, for tank pumping, etc. Below we list with Polished Iron Cylinder, Brass-Lined Cylinder and Brass Body Cylinder. Special Brass Pumps made to order. Pump Cylinder can be emptied of water by raising lever to extreme height, thus tripping valves.

Regular fitting, Iron Pipe. Fitted for lead pipe to order.

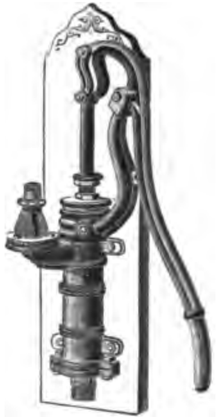


FIG. 391

FIG. 390. SIZES, PRICES, ETC.

No.	Diameter. Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe.	60 ft.	Child	$9.00	Holejim	$11 50	Cart	$13.50
2	2½ "	6 "	.13 "	1¼ "	1¼ "	60 "	Chind	9.50	Holekad	12.00	Drum	14.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	Clted	11.00	Holeklg	13.50	Dry	16.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	40 "	Curdy	17.00	Hooplst	20.50	Cured	24.00
8	4 "	7½ "	.41 "	2 "	1½ "	40 "	Cure	18.00	Hoopltu	23.00	Curfue	30.00

* Total lift and force from water to point of delivery, Pump not more than 25 feet above water.

FIG. 391 SIZES, PRICES, ETC.

No.	Diameter. Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe.	1 in. pipe	60 ft.	Chime	$9.00	Hooplux	$11.50	Case	$13.50
2	2½ "	6 "	.13 "	1¼ "	1¼ "	60 "	Chippy	9 50	Hoopiva	12.00	Ducat	14 00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	City	11.00	Hoopiwa	13 50	Duchy	16.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	40 "	Curl	17.00	Hoopja	20.50	Current	24 00
8	4 "	7½ "	.41 "	2 "	1½ "	40 "	Curly	18.00	Hoopjil	23.00	Currier	30.00

* Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS HOUSE FORCE PUMPS.

WITH AIR CHAMBER AND REVOLVING FULCRUM.

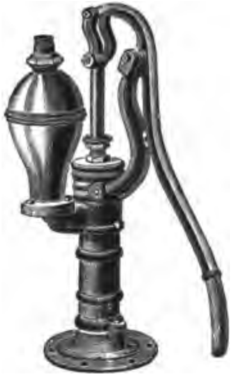


FIG. 392

Fig. 392 represents our House Force Pump on base, having upward discharge air chamber and brass cased rod working through brass gland and attached to lever by links.

Fig. 393 represents our House Force Pump on plank, having upward discharge air chamber and brass cased rod working through brass gland and attached to lever by links. Pumps furnished without plank at 50 cents less list.

These are most popular styles of Force Pumps for house use, for tank pumping, etc.

Below we list them made with polished iron cylinder, brass-lined cylinder and brass body cylinder. Special brass Pumps made to order.

Pump cylinder may be emptied of water by raising lever to extreme height, thus tripping valve.

Regular fitting, iron pipe. Fitted for lead pipe to order.

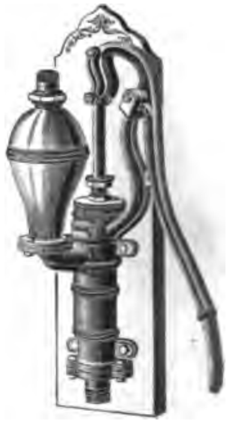


FIG. 393

FIG. 392. SIZES, PRICES, ETC

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	75 ft.	Carviol	$9.50	Hoopjot	$12.00	Carvkog	$14.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	75 "	Chirp	10.00	Hoopjug	12.50	Duck	14.50
4	3 "	6 "	.18 "	1¼ "	1¼ "	75 "	Cavil	12.00	Hourly	14.50	Due	17.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	50 "	Vacancy	19.00	Hourmo	22.50	Vacate	26.00
8	4 "	7½ "	.41 "	2 "	1½ "	50 "	Vacant	20.00	Hournal	25.00	Vacatid	32.00

FIG. 393. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	75 ft.	Carvman	$9.50	Houros	$12.00	Buoma	$14.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	75 "	Chop	10.00	Houroto	12.50	Dual	14.50
4	3 "	6 "	.18 "	1¼ "	1¼ "	75 "	Claim	12.00	Houruba	14.50	Duel	17.00
6	3½ "	7½ "	.31 "	1½ "	1½ "	50 "	Vaccary	19.00	Hourve	22.50	Vacuate	26.00
8	4 "	7½ "	.41 "	2 "	1½ "	50 "	Vaccine	20.00	Hutcka	25.00	Vacuaso	32.00

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS HOUSE FORCE PUMPS.

WITH AIR CHAMBER, COCK SPOUT AND REVOLVING FULCRUM.

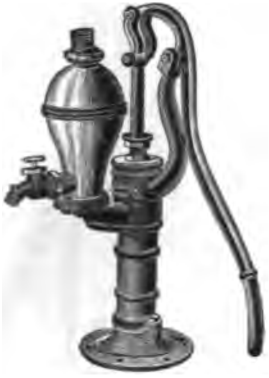


FIG. 394

Fig. 394 represents our Hand Force Pump on base with double discharge air chamber and cock.

Fig. 395 represents our Hand Force Pump on plank, with double discharge air chamber and cock spout. Furnished without plank at fifty cents less list.

Figs. 394 and 395 are exceedingly popular Force Pumps for house use over kitchen sinks. By opening or closing the cock, Pump is made to deliver either at the spout or to storage tank above, as desired. Also popular for stable and out-door use. Pump cylinder can be emptied to prevent freezing by raising lever to extreme height, thus tripping the valve.

Below we list these Pumps, made with Polished Iron Cylinders, with Brass-Lined and with Brass Body Cylinder. Special Brass Pumps made to order.

Regular fitting, iron pipe. Fitted for lead pipe to order.

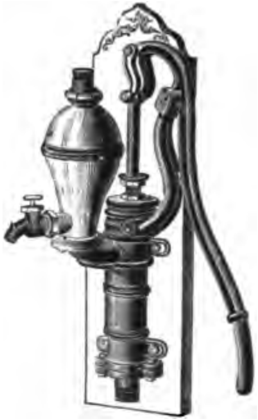


FIG. 395

FIG. 394. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke	Suction.	Discharges.		*Lift and Force.	Iron.		Brass-Lined.		Brass-Cyl.	
					Top of Air-Chamber.	Nose of Cock.		Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	1 in. hose	75 ft.	Diggub	$12.00	Hutckin	$14.50	Digha	$16.50
2	2½ "	6 "	.13 "	1¼ "	1¼ "	1 "	75 "	Drone	12.50	Hutckos	15.00	Duger	17.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	1 "	75 "	Dross	14.50	Hutckul	17.00	Duke	19.50
6	3½ "	7½ "	.31 "	1½ "	1½ "	1 "	50 "	Cut	21.50	Hutbac	25.00	Cutlas	28.50
8	4 "	7½ "	.41 "	2 "	1½ "	1 "	50 "	Cycle	22.50	Hutbil	27.50	Cygnet	34.50

FIG. 395. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharges.		*Lift and Force.	Iron.		Brass-Lined.		Brass Cyl.	
					Top of Air-Chamber.	Nose of Cock.		Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	1 in. hose	75 ft.	Dighim	$12.00	Hutbims	$14.50	Dighot	$16.50
2	2½ "	6 "	.13 "	1¼ "	1¼ "	1 "	75 "	Drop	12.50	Hutbino	15.00	Duly	17.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	1 "	75 "	Drove	14.50	Hutbore	17.00	Dumb	19.50
6	3½ "	7½ "	.31 "	1½ "	1½ "	1 "	50 "	Curt	21.50	Hutbud	25.00	Curtail	28.50
6	4 "	7½ "	.41 "	2 "	1½ "	1 "	50 "	Curve	22.50	Hutbwo	27.50	Curved	34.50

* Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS HOUSE FORCE PUMPS.

WITH DOUBLE DISCHARGE AIR CHAMBER AND REVOLVING FULCRUM.

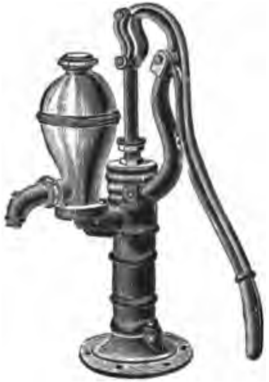


FIG. 398

Fig. 398 represents our House Force Pump on base, with horizontal discharge air chamber. The brass cased piston rod works through brass gland and is attached to lever by links.

Fig. 399 represents our House Force Pump on plank, with horizontal discharge air chamber. Brass cased piston rod works through brass gland and is attached to lever by links. Furnished without plank at 50 cents less list.

These pumps are extremely popular for house pumping, being often set over kitchen sink. Also for filling house tanks; and in warm climates used out of doors. Pump cylinder can be emptied of water by raising lever to extreme height, thus tripping valve.

Below we list with Polished Iron Cylinder, Brass-Lined Cylinder and Brass Body Cylinder. Special Brass Pumps made to order. Regular fitting, iron pipe. Fitted for lead pipe to order.

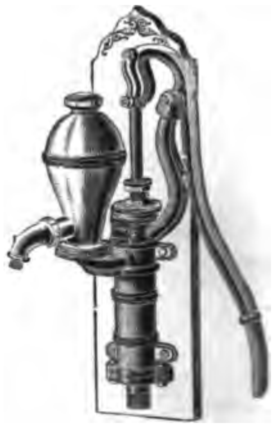


FIG. 399

FIG. 398 SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. hose	75 ft.	Dighyer	$10.50	Hutcat	$13.00	Dinhus	$15.00
2	2½ "	6 "	.13 "	1¼ "	1 "	75 "	Chuck	11.00	Hutcase	13.50	Dunac	15.50
4	3 "	6 "	.18 "	1¼ "	1 "	75 "	Clamy	13.00	Hutcela	15.50	Dunce	18.00
6	3½ "	7½ "	.31 "	1½ "	1 "	50 "	Vagous	20.00	Idlist	23.50	Vagrant	27.00
8	4 "	7½ "	.41 "	2 "	1 "	50 "	Vagrancy	21.00	Idlite	26.00	Vague	33.00

FIG. 399. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. hose	75 ft.	Dinib	$10.50	Idlive	$13.00	Dinite	$15.00
2	2½ "	6 "	.13 "	1¼ "	1 "	75 "	Churn	11.00	Idljay	13.50	Dupe	15.50
4	3 "	6 "	.18 "	1¼ "	1 "	75 "	Clamper	13.00	Idljibs	15.50	Dusk	18.00
6	3½ "	7½ "	.31 "	1½ "	1 "	50 "	Vailers	20.00	Idljocs	23.50	Vain	27.00
8	4 "	7½ "	.41 "	2 "	1 "	50 "	Vailing	21.00	Idljugs	26.00	Vainly	33.00

*Total lift and force from water to point of discharge. Pump not more than 25 feet above water.

GOULDS "UNIVERSE" HAND FORCE PUMP.

FOR HOUSE OR DRIVE WELL USE.

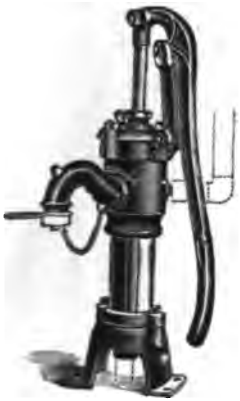


FIG. 1168

Fig. 1168 is an easy working, compact and substantial Hand Force Pump, well adapted for house pumping, furnishing water either at spout or through opening at back to storage tank. Also for outdoor use over drive wells, etc. We offer these pumps with oil polished iron cylinder and nickel-plated brass cylinder. Both iron and brass cylinder pumps have brass cased plunger rod, brass gland and revolving bearer attached with through bolts. Brass Cylinder Pump has galvanized plunger. When so ordered, spout is provided with shut-off cap, attached by swivel and chain.

Fig. 1169 differs from Fig. 1168 only in that it carries brass-fitted compression cock spout.

Either pump fitted for lead pipe suction at slight extra charge *if so ordered.*

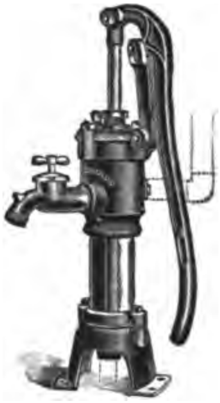


FIG 1169

FIG. 1168. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	DISCHARGES.		IRON.		NICKEL-PLATED, BRASS CYLINDER.	
					Spout.	Back Outlet.	Cipher.	Price.	Cipher.	Price.
2	2¼ in.	4 in.	.09 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	Maltyot	$7.50	Vibreck	$10.00
6	3½ "	4 "	.17 "	1½ "	1 "	1 "	Maltyis	10.00	Maltyul	12.50

FIG. 1169. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	DISCHARGES.		IRON.		NICKEL-PLATED, BRASS CYLINDER.	
					Spout.	Back Outlet.	Cipher.	Price.	Cipher.	Price.
2	2¼ in.	4 in.	.09 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	Mamar	$10.00	Vibreel	$12.50
6	3½ "	4 "	.17 "	1½ "	1 "	1 "	Mamel	12.50	Mamemo	15.00

GOULDS IMPROVED BRASS HOUSE FORCE PUMP.

ON IRON FRAME WITH REVOLVING LEVER

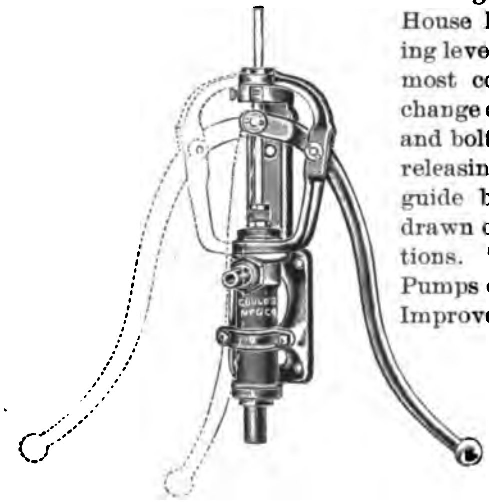


FIG. 1122

Fig. 1122 represents our Improved Brass House Force Pump on iron frame with revolving lever. Lever may be moved to any position most convenient to operate the Pump. The change of position involves no removing of nuts and bolts. The Pump is so constructed that by releasing one set screw and unscrewing the guide bushing and cap, the plunger may be drawn out without disturbing the pipe connections. This is claimed as a feature of many Pumps of this kind, but is only true in Goulds Improved House Force Pump.

Fig. 1241 represents the same Pump with air chamber.

We can fit both suction and discharge for either hose or iron pipe if so ordered, but regularly fit as given in our table below.

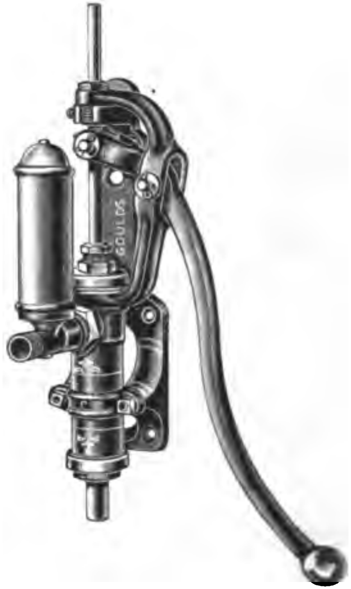


FIG. 1241

FIG. 1122. SIZE, PRICE, ETC.

Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Cipher.	Brass.
1 13-16 in.	3½ in.	.04 gal.	1 in. lead pipe	1 in. gas pipe	50 ft.	Fustko	$10.00

FIG. 1241. SIZE, PRICE, ETC.

Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Cipher.	Brass.
1 13-16 in.	3½ in.	.04 gal.	1 in. lead pipe	¾ in. hose	75 ft.	Maltud	$14.00

* Total lift and force from water to point of delivery, Pump not more than 25 feet above water.

GOULDS HOUSE FORCE PUMP.

WITH CRANK SHAFT AND FLY WHEEL.

Fig. 1243 represents a Suction and Force Pump arranged with crank shaft and fly-wheel.

Recognizing the fact that lever pumps are rarely, if ever, worked to their full length of stroke and that many prefer the crank motion, we have been enabled to shorten the stroke and yet to obtain the same results as from a longer stroke lever Pump, operated in the usual manner.

The addition of cock in air chamber permits water being discharged at point of operation as well as at a distance removed.

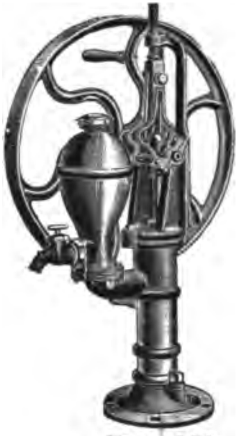


FIG. 1243

FIG. 1243. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharges.		Iron.		Brass-Lined.	
					Top of Air Chamber.	Nose of Cock.	Cipher.	Price.	Cipher.	Price.
2	2½ in.	2½ in.	.05 gal.	1¼ in. pipe.	1¼ in pipe.	1 in. hose.	Napklo	$20.50	Naplot	$23.00
4	3 "	2½ "	.08 "	1¼ "	1¼ "	1 "	Naplig	22.50	Numef	25.00

GOULDS DOUBLE-ACTING HOUSE FORCE PUMP.

WITH CRANK SHAFT AND FLY-WHEEL.

The Pump, represented herewith is but a modification of our new style "Atlantic" Double-Acting Suction and Force Pump, arranged with crank shaft and fly-wheel. Cock in spout permits discharge to be made from top of air chamber to tank above or wherever desired.

The Valves, of a new and improved style, are all grouped in valve box in front and easy of access.

Plugs are provided for emptying Pump of water in cold weather.

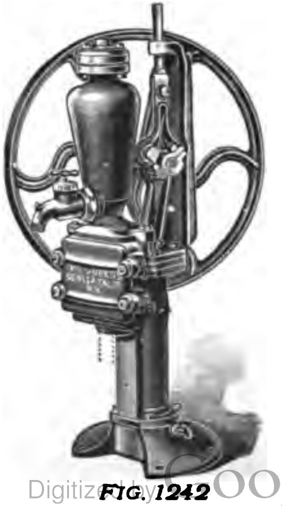


FIG. 1242

FIG. 1242. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Revolution.	Suction.	Discharges.		Iron.		Brass-Lined.	
					Top of Air Chamber.	Nose of Cock.	Cipher.	Price.	Cipher.	Price.
4	3 in.	2½ in.	.15 gal.	1½ in. pipe.	1½ in. pipe.	1 in. hose.	Napjat	$38.00	Napkil	$40.50

GOULDS HOUSE FORCE PUMPS.

MOUNTED ON PLANK. RIGHT OR LEFT HANDED.

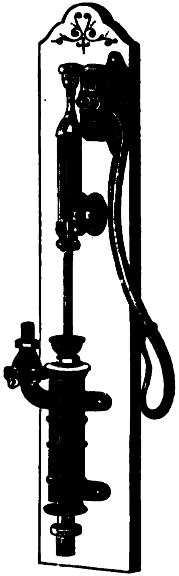


FIG. 440

Fig. 440 represents our Single-Acting Suction and Force Pump, with brass-cased plunger rod, pitman and guide, mounted on plank, for indoor use, and can be made either right or left handed.

It is generally employed for lifting water from wells or cisterns and forcing it up into more elevated parts of the house for bath-rooms, tanks, etc. Plumbers, wishing to attach copper air chambers, usually select this style. The check valve can be removed and air chamber substituted without extra fitting.

Fig. 441 represents the same Pump with the addition of an air chamber which insures a continuous stream of water and relieves the pipe from the concussion of the water.

Brass Cylinder Pumps have Brass Plungers.

Brass Air Chambers and All-Brass Pumps made to order.

Pumps furnished without planks, $1.00 less list.

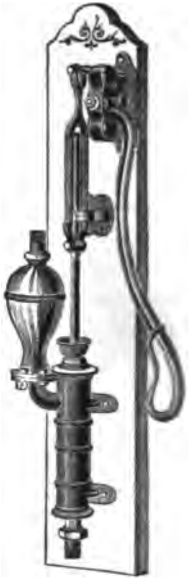


FIG. 441

FIG. 440. SIZES, PRICES, ETC

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	IRON.		BRASS-LINED.		BRASS CYLINDER.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	80 ft.	Flit	$15.00	Lenafx	$17.50	Dyer	$20.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	60 "	Float	15.50	Lenagy	18.00	Eacher	20.50
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	60 "	Flock	16.00	Lenagzu	19.00	Eady	22.00
4	3 "	7 "	.21 "	1¼ "	1¼ "	60 "	Flog	16.50	Lenahow	20.00	Eager	23.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	40 "	Flopa	20.00	Lenahud	24.00	Eagerly	28.00
6	3½ "	7 "	.29 "	1½ "	1½ "	40 "	Flora	22.00	Lenahyx	26.50	Earing	32.00

FIG. 441. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	IRON.		BRASS-LINED.		BRASS CYLINDER.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	100 ft.	Floss	$17.00	Lenaid	$19.50	Earn	$22.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	75 "	Flour	17.50	Lenaifu	20.00	Earth	22.50
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	75 "	Flout	18.00	Lenajoe	21.00	Earwig	24.00
4	3 "	7 "	.21 "	1¼ "	1¼ "	75 "	Flow	18.50	Listmae	22.00	Ease	25.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	50 "	Flown	23.00	Listmic	27.00	Easel	31.00
6	3½ "	7 "	.29 "	1½ "	1½ "	50 "	Fluid	25.00	Listmoq	29.50	Easily	35.00

***Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.**

GOULDS HOUSE FORCE PUMPS.

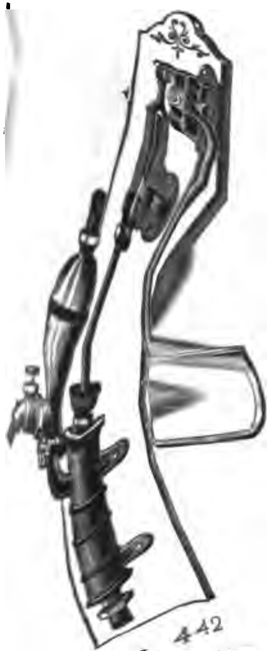


FIG. 442

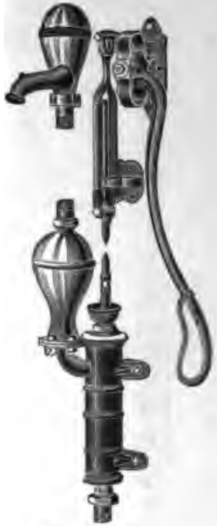


FIG. 281

Fig. 442 represents our House Force Pump with air chamber and cock through which water can be drawn at pump. This cock spout can be exchanged for brass tube, cut for iron pipe, at a $1.50 less list.

Pumps furnished without plank, $1.00 less list.

Fig. 281 represents a House Force Pump adapted for deep wells or any place where it is desired to operate Pump at some distance above water. The following should be observed in placing these Pumps: At, say, 15 or 20 feet from the bottom of well secure Pump to a timber or plank. At convenient height above locate lever and spout air chamber. Connect the air chamber above with the one below by pipe. Join the stub end attached to the lever to the stub end of the Pump by the necessary length of rod.

When ordered without spout air chamber, a deduction of $1.00 in list will be made.

Brass Air Chamber and All-Brass Pumps made to order.

FIG. 442. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharges.		*Lift and Force.	Iron.		Brass-Lined.		Brass Cyl.	
					Top of Air Chamber.	Nose of Cock.		Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.09 gal.	1 in. pipe.	1 in. pipe.	1 in. hose.	100 ft.	Fluke	$19.50	Hipluc	$22.00	Fog	$24.50
2	2½ "	7 "	.15 "	1¼ "	1¼ "	1 "	75 "	Flume	20.00	Hipluda	22.50	Foil	25.00
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	1 "	75 "	Flung	20.50	Hiplufd	23.50	Foiler	26.50
4	3 "	7 "	.21 "	1¼ "	1¼ "	1 "	75 "	Flush	21.00	Hipluga	24.50	Fold	28.00
5	3¼ "	7 "	.25 "	1½ "	1½ "	1 "	50 "	Flute	26.00	Hipluhu	30.00	Folder	34.00
6	3½ "	7 "	.29 "	1½ "	1½ "	1 "	50 "	Flusha	28.00	Himal	32.50	Foliage	38.00

FIG. 281. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cyl.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.09 gal.	1 in. pipe.	1 in. pipe.	75 ft.	Dandy	$17.00	Himeta	$19.50	Holeci	$22.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	50 "	Dane	17.50	Himevo	20.00	Holedo	22.50
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	50 "	Danker	18.00	Himfa	21.00	Holefu	24.00
4	3 "	7 "	.21 "	1¼ "	1¼ "	50 "	Darell	18.50	Himfig	22.00	Holega	25.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	35 "	Dared	23.00	Himgal	27.00	Holeho	31.00
6	3½ "	7 "	.29 "	1½ "	1½ "	35 "	Dark	25.00	Holeba	29.50	Holeiku	35.00

*** Total lift and force from supply to point of delivery, Pumps not more than 25 feet above water.**

GOULDS HOUSE FORCE PUMPS.

FOR HAND AND MACHINE POWER.

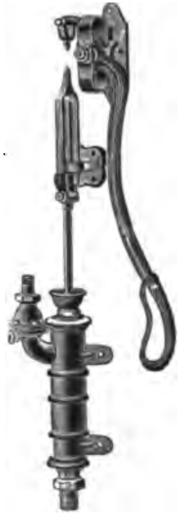


FIG. 480

Fig. 480 represents our House Force Pump, with pitman, guide and guide rod, but with disconnected rod above, adapted for deep wells or any place where it is desired to operate Pump at some distance above water.

The cylinder can be placed at the bottom of well or cistern, or within, say, fifteen or twenty feet (suction distance) of water. At convenient height above locate lever and join the stub end attached to the lever to the stub end of the Pump by connecting rod.

Brass Pumps made to order.

Fig. 714 represents our Single-Acting Force Pump without lever, bearer and cock, but with the pitman and guide arranged for power. Counter shafts, Figs. 711, 650, 650½, pages 102 and 103, may be employed to operate.

Brass Pumps made to order.

Pumps furnished without planks, $1.00 less list.

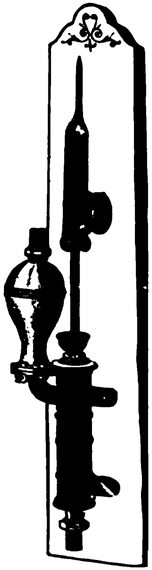


FIG. 714

FIG. 480. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinder.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.09 gal.	1 in. pipe	1 in. pipe	80 ft.	Grass	$14.00	Hencipa	$16.50	Hewjost	$19.00
2	2½ "	7 "	.15 "	1¼ "	1¼ "	60 "	Grate	14.50	Hewioc	17.00	Hewjuga	19.50
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	60 "	Gray	15.00	Hewips	18.00	Highac	21.00
4	3 "	7 "	.21 "	1¼ "	1¼ "	60 "	Graze	15.50	Hewirt	19.00	Highil	22.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	40 "	Greet	19 00	Hewisa	23.00	Highob	27.00
6	3½ "	7 "	.29 "	1½ "	1½ "	40 "	Grew	21.00	Hewjon	25.50	Highud	31.00

FIG. 714. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.		Brass Cylinde	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Pric
2	2½ in.	7 in.	.15 gal.	1¼ in. pipe	1¼ in. pipe	75 ft.	Textok	$17.00	Highso	$19.50	Warry	$22.0
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	75 "	Thaw	17.50	Hiplid	20.50	Warsong	23.5
4	3 "	7 "	.21 "	1¼ "	1¼ "	75 "	Thorn	18.50	Hiplifa	22.00	Warsunk	25.5
5	3¼ "	7 "	.25 "	1½ "	1½ "	50 "	Throb	23.00	Hiploe	27.00	Wart	31.0
6	3½ "	7 "	.29 "	1½ "	1½ "	50 "	Tick	25.00	Hiploma	29.50	Warted	35.0

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

GOULDS HOUSE FORCE PUMPS.

MOUNTED ON PLANK, WITH CRANK AND BALANCE WHEEL.

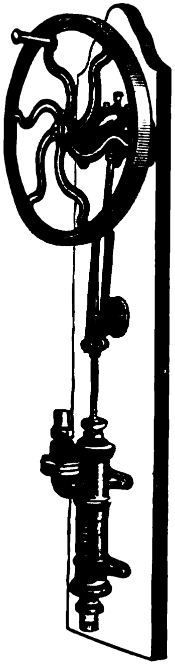


FIG. 712

Fig. 712 shows our Single-Acting House Force Pump, with check valve, mounted on plank, with crank shaft and balance wheel, which will be found a welcome substitute for the ordinary lever where any considerable quantity of water is to be raised.

Fig. 713 is the same pump arranged with air chamber instead of check valve, and we recommend this form where water is to be lifted any distance above pump.

Cock added to air chamber at $2.50 extra list.

We can also furnish our Double-Acting Pumps, like Figs. 271 and 273, page 126, mounted in the same way, if desired. We give lists on both kinds of pumps below.

In ordering, always state whether you want a Single or Double-Acting Pump.

Pumps furnished without planks, $1.00 less list.

Brass-Lined, Brass Cylinder or Brass Pumps made to order at proportionate prices.

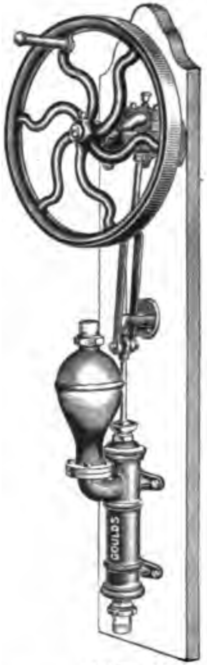


FIG. 713

FIG. 712. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Suction.	Discharge.	*Lift and Force.	SINGLE-ACTING PUMP.			DOUBLE-ACTING PUMP.		
						Capacity per Stroke.	Cipher.	Iron.	Capacity per Rev.	Cipher.	Iron.
2	2¼ in.	7 in.	1¼ in. pipe	1¼ in. pipe	80 ft.	.15 gal.	Tabor	$27.00	.30 gal.	Talon	$29.00
3	2¾ "	7 "	1¼ "	1¼ "	60 "	.18 "	Tack	29.00	.36 "	Tame	33.00
4	3 "	7 "	1¼ "	1¼ "	60 "	.21 "	Tagar	32.00	.43 "	Tank	36.50
5	3¼ "	7 "	1½ "	1½ "	40 "	.25 "	Tall	35.00	....	....	....
6	3½ "	7 "	1½ or 2 "	1½ or 2 "	40 "	.29 "	Tally	39.00	.58 "	Tansy	43.00

FIG. 713. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Suction.	Discharge.	*Lift and Force.	SINGLE-ACTING PUMP.			DOUBLE-ACTING PUMP.		
						Capacity per Stroke.	Cipher.	Iron.	Capacity per Rev.	Cipher.	Iron.
2	2¼ in.	7 in.	1¼ in. pipe	1¼ in. pipe	100 ft.	.15 gal.	Tareat	29.00	.30 gal.	Teamo	$31.50
3	2¾ "	7 "	1¼ "	1¼ "	75 "	.18 "	Tartes	31.00	.36 "	Tearap	35.50
4	3 "	7 "	1¼ "	1¼ "	75 "	.21 "	Task	34.50	.43 "	Tenor	38.50
5	3¼ "	7 "	1½ "	1½ "	50 "	.25 "	Taxdet	38.00	....	....	....
6	3½ "	7 "	2 "	2 "	50 "	.29 "	Teaba	42.00	.58 "	Tentap	46.00

*Total lift and force from supply to point of delivery, Pumps not more than 25 feet above water.

DOUBLE-ACTING HOUSE FORCE PUMPS.

MOUNTED ON PLANK. RIGHT OR LEFT HANDED.

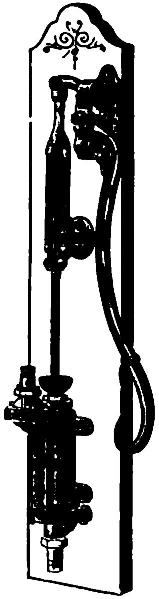


FIG. 271

Fig. 271 represents one of our well-known Double-Acting Force Pumps, mounted on plank, with check valve for house use. In explanation of a Double-Acting Pump would say that they lift and force water with both the upward and downward motions of the lever, giving double the quantity of water that a Single-Acting Pump of equal size would.

Fig. 273 represents one of our well-known Double-Acting Suction and Force Pumps, mounted on plank, with air chamber and cock spout. Can be arranged either right or left handed, and discharge may be made through top of air chamber or from spout.

Can furnish with plain air chamber for single or double discharge, or with check valve instead, at a reduction in price.

Pumps fitted for hot water with metallic valves at extra charge. Brass Cylinder and Brass Pumps made to order. Pumps furnished without planks, $1.00 less list.

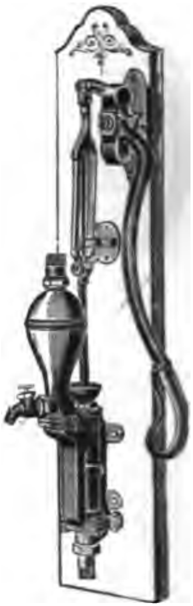


FIG 273

FIG. 271. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	Iron.		Brass-Lined.	
						Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.19 gal.	1¼ in. pipe	1¼ in. pipe	Clump	$16.50	Muncud	$19.00
1	2¼ "	7 "	.24 "	1¼ "	1¼ "	Coach	16.50	Muncyx	19.00
2	2½ "	7 "	.30 "	1¼ "	1¼ "	Coast	17.00	Mundar	19.50
3	2¾ "	7 "	.36 "	1¼ "	1¼ "	Coated	19.00	Mundask	22.00
4	3 "	7 "	.43 "	1½ "	1¼ "	Coax	21.00	Mundem	24.50
6	3½ "	8 "	.67 "	1½ "	1½ "	Codex	25.00	Mustama	29.50
8	4 "	8 "	.87 "	2 "	2 "	Coiled	37.00	Mustet	42.00
10	4½ "	8 "	1.10 "	2½ "	2½ "	Coin	50.00	Mustevo	55.00

FIG. 273. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Revolution.	Suction.	Discharges Fitted.		*Lift and Force.	Iron.		Brass-Lined.	
					Top of Air Chamber.	Nose of Cock.		Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.19 gal.	1¼ in. pipe	1¼ in. pipe	1 in. hose	100 ft.	Verdict	$21.00	Mustib	$23.50
1	2¼ "	7 "	.24 "	1¼ "	1¼ "	1 "	75 "	Verdigr	21.00	Musticl	23.50
2	2½ "	7 "	.30 "	1¼ "	1¼ "	1 "	75 "	Verditer	21.50	Mustjaw	24.00
3	2¾ "	7 "	.36 "	1¼ "	1¼ "	1 "	75 "	Verdure	23.50	Mustjib	26.50
4	3 "	7 "	.43 "	1½ "	1¼ "	1 "	75 "	Verecun	25.50	Napidy	29.00
6	3½ "	8 "	.67 "	1½ "	1½ "	1 "	50 "	Verge	31.00	Napiff	35.50
8	4 "	8 "	.87 "	2 "	2 "	1 "	50 "	Vergers	45.00	Napigs	50.00
10	4½ "	8 "	1.10 "	2½ "	2½ "	1 "	40 "	Verging	58.00	Napiho	63.00

*Total lift and force from supply to point of delivery. Pump not more than 25 feet above water.

GOULDS HOUSE FORCE PUMPS.

FOR HAND AND POWER.

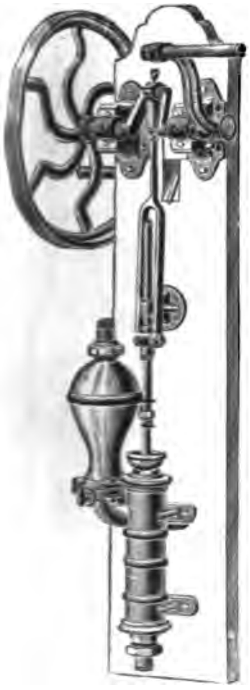


FIG. 449

Fig. 449 represents our Single-Acting Force Pump, on plank, with crank shaft, balance wheel and winch handle adapted for two to four men. When so ordered we can supply with 24-inch diameter, 3-inch face pulley balance wheel for belt, at $1.00 extra list.

Fig. 450 represents our Double-Acting Force Pump with crank shaft, balance wheel and winch handles, adapted for two to four men. When so ordered, we can supply with 24-inch diameter, 3½-inch face pulley balance wheel for belt, at $1.00 extra list or with 36 x 4-inch, at $2.50 extra list.

Suction and discharge always fitted for wrought-iron pipe, although we can fit for lead pipe if so ordered.

Can also fit these and other Pumps of this class with metallic valves throughout for hot or corrosive liquids. Brass pumps made to order. We deduct $1.00 from list given below when planks are not furnished.

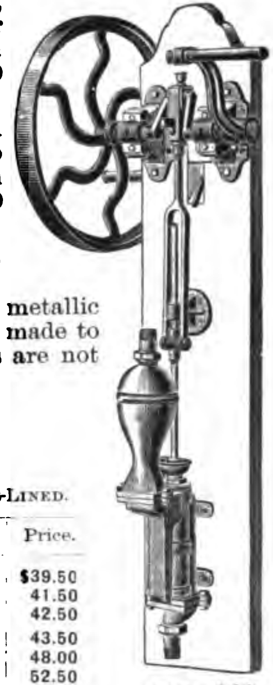


FIG. 450

FIG. 449. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	IRON.		BRASS-LINED.	
						Cipher.	Price.	Cipher.	Price.
0	2 in.	7 in.	.09 gal.	1¼ in. pipe	1¼ in. pipe	Frith	$37.00	Moonki	$39.50
2	2½ "	7 "	.15 "	1¼ "	1¼ "	Friz	39.00	Moonlat	41.50
3	2¾ "	7 "	.18 "	1¼ "	1¼ "	Frock	39.50	Mostol	42.50
4	3 "	7 "	.21 "	1¼ "	1¼ "	Frog	40.00	Mostyl	43.50
5	3¼ "	7 "	.25 "	1½ "	1½ "	Fromer	44.00	Motija	48.00
6	3½ "	7 "	.29 "	1½ "	1½ or 2 "	Front	43.00	Motiks	52.50

FIG. 450. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Rev.	Suction.	Discharge.	Balance Wheel.	*Lift and Force.	IRON.		BRASS-LINED.	
								Cipher.	Price.	Cipher.	Price.
2	2½ in.	7 in.	.30 gal.	1¼ in. pipe	1¼ in. pipe	24 in.	75 ft.	Full	$40.00	Muncjo	$42.50
3	2¾ "	7 "	.36 "	1¼ "	1¼ "	24 "	75 "	Fume	42.00	Muncku	45.00
4	3 "	7 "	.43 "	1½ "	1¼ "	24 "	75 "	Funab	45.00	Muncla	48.50
6	3½ "	7½ "	.62 "	1½ "	1½ "	36 "	50 "	Fund	55.00	Muncme	59.50
8	4 "	7½ "	.82 "	2 "	2 "	36 "	50 "	Fur	65.00	Muncnv	70.00
10	4½ "	7½ "	1.03 "	2½ "	2½ "	36 "	40 "	Fursa	80.00	Muncob	85.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

GOULDS DOUBLE-ACTING HOUSE FORCE PUMPS.

MOUNTED ON PLANK AND FITTED WITH COCK-SPOUT.

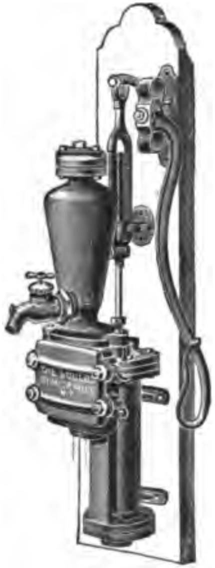


FIG. 1233

Fig. 1233 represents our new Double-Acting House Force Pump, mounted on long plank, and provided with pitman and guide Valves are brass, leather-faced, and being grouped in valve chest are easily accessible by removing front plate. Piston is double cup-leather packed. Cock-spout is provided, thus affording necessary means of closing spout discharge when desiring to pump through discharge at top of air chamber to tank or elsewhere. Pumps furnished without cock spout, $2.00 less list, without plank, $1.00 less list.

Fig. 1234 represents the same Pump, mounted on heavy plank, with crank shaft, stub end, gib and key, plummer blocks, winch handle and fly-wheel, arranged for two to four men and capable of lifting or forcing large quantities of water. Pumps furnished without cock spout, $2.00 less list, without plank, $1.00 less list.

Fig. 1234, with 36 x 4 inch heavy pulley for belt substituted for either fly-wheel or handle at $2.50 extra list.

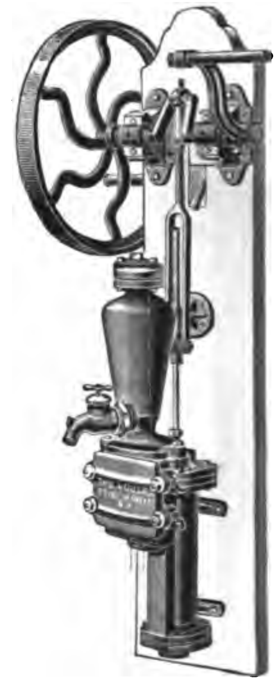


FIG. 1234

FIG. 1233. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Revolution.	†Suction Fitted for.	Discharges Fitted.		*Lift and Force.	Iron.		Brass-Lined.	
					Top of Air Chamber.	Cock Spout.		Cipher.	Price.	Cipher.	Price.
4	3 in.	6 in.	.37 gal.	1½ in. pipe	1½ in. pipe	1 in. hose	75 ft.	Meshub	$30.00	Meshxur	$33.50
6	3½ "	6 "	.50 "	2 "	2 "	1 "	50 "	Meshvu	37.50	Mesleen	42.50
8	4 "	6 "	.65 "	2 "	2 "	1 "	50 "	Meshwy	45.00	Mesleft	50.00

FIG. 1234. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Revolution.	† Suction Fitted For.	Discharges Fitted.		* Lift and Force.	Iron.		Brass-Lined.	
					Top of Air Chamber.	Cock Spout.		Cipher.	Price.	Cipher.	Price.
4	3 in.	6 in.	.37 gal.	1½ in. pipe	1½ in. pipe	1 in. hose	75 ft.	Moawa	$45.00	Moonhat	$48.50
6	3½ "	6 "	.50 "	2 "	2 "	1 "	50 "	Moonel	55.00	Moonill	60.00
8	4 "	6 "	.65 "	2 "	2 "	1 "	50 "	Moongis	65.00	Moonja	70.00

† Suction and discharge can be fitted differently, but always sent as listed unless otherwise ordered.
* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

GOULDS FORCE PUMP ON PLANK.

FOR HAND OR POWER.

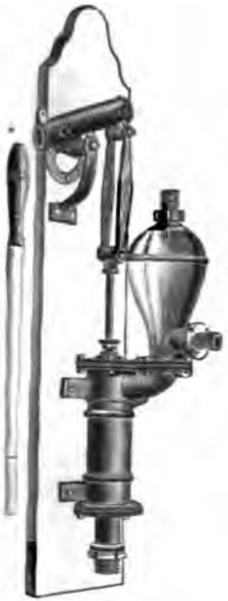


Fig. 278 gives a good representation of a new pattern of Iron Force Pump, mounted on plank, for hand use. It is extra strong and heavy, fitted with leather valves and packings, and has no equal for forcing water into railroad station tanks, tubs in distilleries, breweries, etc., where one man's power is to be exerted.

Fig. 279 differs but slightly in construction from Pump described above, having the pitman forged with a stub end for connecting to face plate above.

For pumping hot liquids we fit them with metallic valves and packings at extra charge.

Brass Pumps made to order.

We deduct $1.00 from list when ordered without plank.

FIG. 278

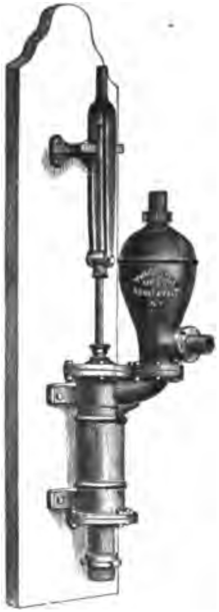


FIG. 279

FIG. 278. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	* Lift and Force.	Iron.		Brass-Lined.	
							Cipher.	Price.	Cipher.	Price.
8	4 in.	8 in.	.43 gal.	2 in. pipe	2 in. pipe	75 ft.	Cynic	$30.00	Rawfel	$35.00
12	5 "	10 "	.85 "	2½ "	2½ "	75 "	Czar	40.00	Rawfib	47.50
16	6 "	10 "	1.22 "	3 "	3 "	50 "	Dah	55.00	Reeffe	65.00

FIG. 279. SIZES, PRICES, ETC.

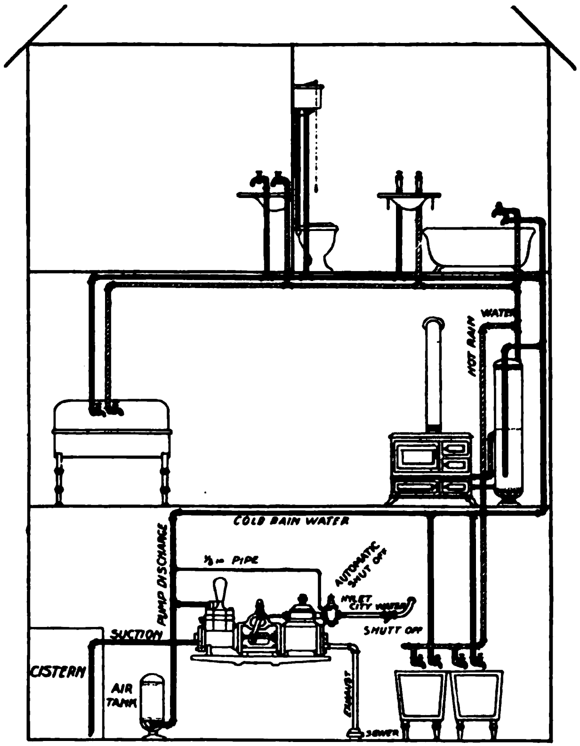
No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	* Lift and Force.	Iron.		Brass-Lined.	
							Cipher.	Price.	Cipher.	Price.
8	4 in.	8 in.	.43 gal.	2 in. pipe	2 in. pipe	75 ft.	Daily	$30.00	Reeffo	$35.00
12	5 "	10 "	.85 "	2½ "	2½ "	75 "	Daisy	40.00	Reefhe	47.50
16	6 "	10 "	1.22 "	3 "	3 "	50 "	Dairy	55.00	Reefhif	65.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

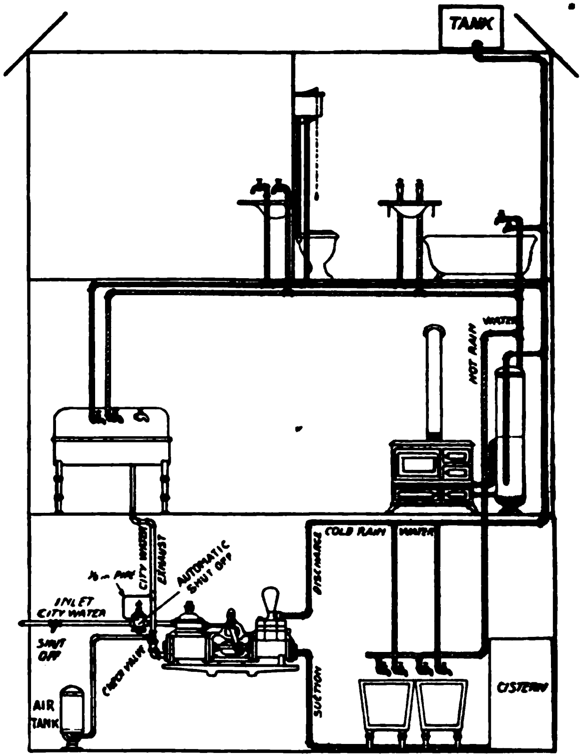
PIPING DIAGRAMS OF GOULDS WATER LIFTERS.

Pipes shown in full line contain cold water.

Pipes shown in light line contain hot water.



Pumping Soft Water Direct to Fixtures Without Use of Storage Tank.



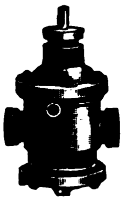
Pumping Soft Water to Tank and Using Exhaust Water.

Above engravings show two of the most economical plans for piping Water Lifters. These can be modified or elaborated to suit requirements. When pumping to tank without desiring to use exhaust water, Automatic Shut-off Valve is not required, and exhaust is piped into sewer.

GOULDS "NEW DUPLEX" BRONZE WATER LIFTER.

FOR DIRECT SYSTEM OR TANK PUMPING.

Automatic Shut-off Valve.



(Patent applied for.)

Fig. 1250, "New Duplex" Bronze Water Lifter, is a hydraulic pumping engine operated by city water pressure, for automatically pumping rain water to storage tank or direct to fixtures, or increasing city water pressure for high buildings.

Tables on following page show the results which can be attained at either service, also the pumping capacity of machines.

For pumping direct to fixtures (no storage tank), always use "New Duplex" with *Automatic Shut-off Valve*, which shuts off the city water from the machine when plumbing fixtures are closed. When a fixture is opened, and thereby pressure on pump discharge relieved, the Automatic Shut-off opens and machine starts. When at rest there is no pressure on machine; all strain is relieved, and all "creeping" and wasting of water avoided. Only by this controlling principle can direct pumping be *satisfactory*.

Exhaust city water, after performing its function as power in pumping soft water to tank, can be used in kitchen or closets, and thereby an actual economy in city water consumption effected. For this plan, connect Automatic Shut-off to exhaust.

See piping diagram on previous page.

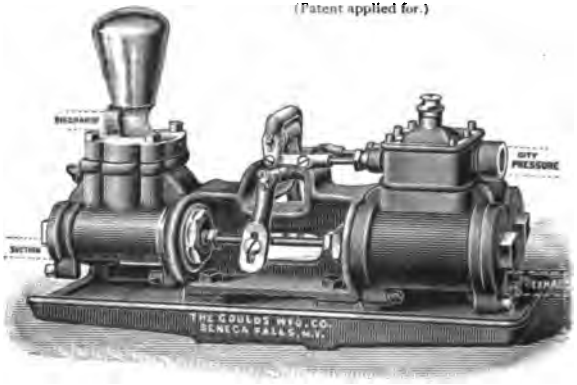


FIG. 1250

FIG. 1250. SIZES, PRICES, ETC.

No.	Diameter of Cylinder.		Stroke.	Pipe Connections.				Fig. 1250, Without Automatic Shut-off.		Fig. 1250, With Automatic Shut-off.	
				Power Cylinders.		Pump Cylinders.					
	Power.	Pump.		*Supply.	Exhaust.	Suction.	Discharge.	Cipher.	Price.	Cipher.	Price.
0	2 in.	1½ in.	3 in.	½ in. pipe.	¾ in. pipe.	¾ in. pipe.	½ in. pipe.	Rusefat	$40.00	Rusegun	$45.00
1	2½ "	1½ "	3 "	¾ "	¾ "	¾ "	½ "	Rusefel	40.00	Rusegyl	45.00
3	2 "	2 "	3 "	½ "	¾ "	¾ "	¾ "	Rusefir	42.50	Ruseham	47.50
4	2½ "	2 "	3 "	¾ "	¾ "	¾ "	¾ "	Rusego	45.00	Rusehen	50.00

---

* If more than 10 feet of this pipe is required, a size larger than given in table should be used to avoid friction loss and consequent reduction of pressure.

GOULDS DUPLEX WATER LIFTER.

A PUMP OPERATED BY WATER PRESSURE.

Automatic Shut-off Valve.

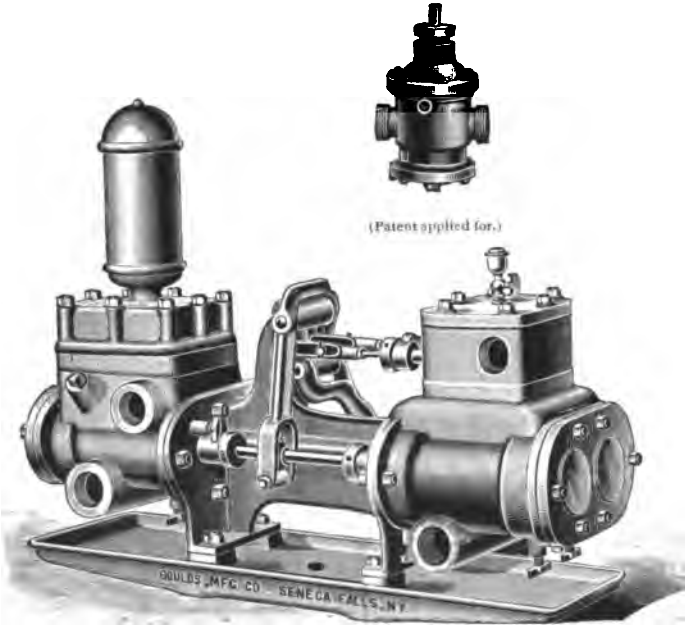

(Patent applied for.)
GOULDS MFG. CO. SENECA FALLS, N.Y.

FIG. 935

Fig. 935, Duplex Water Lifter, is built in larger sizes and differs somewhat in design and details of construction from the "New Duplex," shown on page 131. It can be used to supply tanks, or, by the addition of automatic *shut-off valve*, can be used to pump direct to fixtures. The cylinder is brass-lined and all valves and working parts are brass.

Furnished with fibrous or metallic packed pistons, for hot water or acids, to order.

Table of pumping power and capacity on following page.

FIG. 935. SIZES, PRICES, ETC.

No.	Diameter of Cylinders.		Stroke.	Sizes of Pipe Connections.				Without Automatic Shut-off.		With Automatic Shut-off.	
				Power Cylinders.		Pump Cylinder.					
	Power.	Pump.		Supply.	Exhaust.	Suction.	Delivery.	Cipher.	Price.	Cipher.	Price.
10	3 in.	2 in.	4 in.	1¼ in.	1½ in.	1¼ in.	1¼ in.	Worsepr	$70.00	Ridejg	$80.00
11	3 "	2½ "	4 "	1¼ "	1½ "	1½ "	1¼ "	Wrassid	75.00	Rideki	85.00
12	3 "	3 "	4 "	1½ "	1½ "	1½ "	1¼ "	Wrather	80.00	Ridels	90.00

PUMPING POWER AND CAPACITY OF WATER LIFTERS.

FIG. 1250. "NEW DUPLEX."

Diameter Power Cylinders	2 in.	2½ in.	2 in.	2½ in.	2 in.	2½ in.	2 in.	2½ in.	2 in.	2½ in.	2 in.	2½ in.
Diameter Pump Cylinders	1½ “	1½ “	2 “	2 “	1½ “	1½ “	2 “	2 “	1½ “	1½ “	2 “	2 “
Gallons Pumped per Hour at 30 Revolutions per Minute	165	165	295	295	165	165	295	295	165	165	295	295
Gallons Exhausted per Hour at 30 Revolutions per Minute	295	455	295	455	295	455	295	455	295	455	295	455

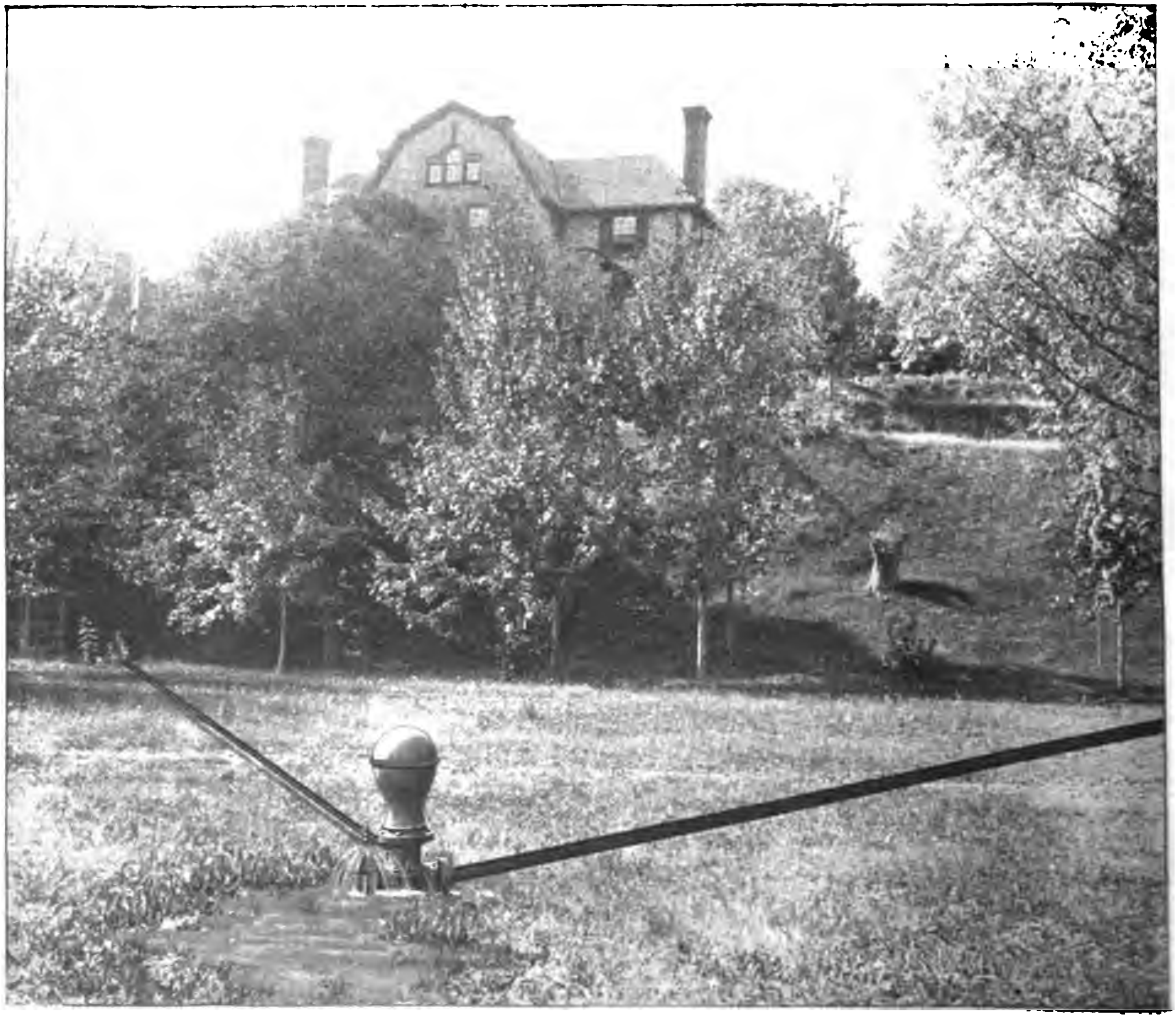
CITY WATER PRESSURE.	Exhausting Freely Will Pump Cistern Water to Elevations as Given Below.				Elevating Exhaust Water 15 Feet Will Pump Cistern Water to Elevations as Given Below.				Exhausting Freely Will Pump *City* Water to Elevations as Given Below.			
15 lbs	35 ft.	55 ft.				30 ft.			70 ft.	110 ft.	40 ft.	60 ft.
20 “	50 “	75 “		40 ft.	30 ft.	45 “		25 ft.	100 “	150 “	50 “	80 “
25 “	60 “	90 “	30 ft.	50 “	40 “	65 “	25 ft.	35 “	120 “		60 “	100 “
30 “	70 “	110 “	40 “	60 “	50 “	80 “	30 “	45 “	140 “		80 “	120 “
35 “	80 “	130 “	45 “	70 “	65 “	100 “	35 “	55 “			90 “	140 “
40 “	95 “		55 “	80 “	75 “	120 “	45 “	65 “			110 “	
45 “	105 “		60 “	90 “	90 “		50 “	75 “			120 “	
50 “			65 “	100 “	100 “		55 “	85 “			140 “	
60 “							70 “	105 “				
70 “							85 “	125 “				
80 “							95 “					

FIG. 935. DUPLEX WATER LIFTER.

Diameter Power Cylinders	3 in.	3 in.	3 in.	3 in.	3 in.	3 in.	3 in.	3 in.	3 in.
Diameter Pump Cylinders	2 “	2½ “	3 “	2 “	2½ “	3 “	2 “	2½ “	3 “
Gallons Pumped per hour at 30 Revolutions per Minute	390	610	880	390	610	880	390	610	880
Gallons Exhausted per Hour at 30 Revolutions per Minute	880	880	880	880	880	880	880	880	880

CITY WATER PRESSURE.	Exhausting Freely will Pump Cistern Water to Elevations as Given Below.			Elevating Exhaust Water 15 Feet Will Pump Cistern Water to Elevations as Given Below.			Exhausting Freely Will Pump *City* Water to Elevations as Given Below.		
15 lbs	45 ft.	30 ft.		25 ft.			90 ft.	60 ft.	40 ft.
20 “	60 “	40 “		40 “	25 ft.		120 “	80 “	50 “
25 “	75 “	50 “	35 ft.	55 “	35 “	25 ft.		100 “	70 “
30 “	90 “	60 “	40 “	70 “	45 “	30 “		120 “	80 “
35 “	105 “	70 “	45 “	85 “	55 “	35 “			90 “
40 “		80 “	55 “	100 “	65 “	45 “			110 “
45 “		90 “	60 “		75 “	50 “			120 “
50 “		100 “	70 “		85 “	55 “			135 “
60 “			80 “		105 “	70 “			
70 “			95 “			85 “			
80 “			110 “			95 “			

For Piping Diagrams, see page 130.



HYDRAULIC RAM IN OPERATION   SEE PAGES 135 TO 137.

GOULDS IMPROVED HYDRAULIC RAMS.

FOR SUPPLYING DWELLINGS, HOTELS, FACTORIES, RAILROAD STATIONS STOCK YARDS, ETC., WITH RUNNING WATER.

THE HYDRAULIC RAM AS WE BUILD IT to-day represents the most efficient and automatic labor-saving device known for raising water any distance where a sufficient supply and head are attainable, and the slight expense for first outlay and maintenance considered render them most desirable for supplying running water in any quantity. With an experience of 35 years in their manufacture, and a practical knowledge of the requirements necessary for their successful operation, we are able to offer the most efficient Ram in the market. Our castings are all heavy in pattern and of proportionate strength. The air chambers are larger than those of any other Ram, thus relieving it of all undue strain and aiding its working, while the valve stem and case (made of the best bronze metal) are of a new and improved design, calculated to develop the greatest possible efficiency. Reference to our engravings will show in a measure how these Rams have been strengthened in all parts, while we can still further increase their efficiency by substituting a new and improved style of brass poppet or spring valve in place of the ordinary leather one in the air chamber, thus rendering them metallic fitted throughout. The conditions and requirements under which rams are operated are so varied that we have thought best to treat these under separate heads.

HEAD OR FALL OF DRIVE PIPE.— Rams will work successfully where the spring or brook is only three feet higher than the Ram; yet, as the height or head increases, the more powerful the Ram operates, and its ability to force water to greater elevation and distance correspondingly strengthened. The best results will be secured where the head of fall is proportioned to work. See table, etc.

SIZE AND LENGTH OF DRIVE PIPE.— Size of drive pipes has been determined for each size of Ram, after years of experiment and practical use. Do not change it. Practical experience and experiments have proven that the best results are obtained where there is ample, though not excessive, length as well as fall to the drive pipe, for the weight of this volume of water is an important auxiliary in forcing water into the air chamber and through the delivery pipe. We recommend drive pipes to be 50 to 75 feet in length, though in very heavy lifts this may be advantageously increased to 125 feet.

Friction of water in pipes will prevent good results if the Ram with a small drive pipe be placed too far from the water supply; the larger the drive pipe, the longer it can be successfully made.

WATER FURNISHED RAM.— The quantity of water furnished a Ram, or amount requisite to operate it, is determined by the size and fall of head of drive pipe. Where the supply water is limited there is no simpler or better plan of determining this quantity than to measure in pails or barrels the number of gallons which can be led in pipes from the spring or brook per minute or in any given length of time.

WATER RAISED AND WASTED.— The relative height of the spring or supply above the Ram, and the elevation to which it is required to raise, determine the relative proportion between the water raised and wasted — the quantity raised varying according to the height it is conveyed with a given fall; also, the distance the water has to be conducted, and consequent length of pipes, have some influence on the quantity delivered at the point of discharge, as the more extended pipes through which the water has to be forced by the Ram, the more friction there is to overcome. See table, etc.

DIRECTIONS FOR PLACING RAMS AND PIPES—Do not use smaller discharge pipes than given in our tables, and where length be great it is advisable to increase size. Turns or bends in either drive or discharge pipe should be avoided, if possible. Where obliged to set the Ram with elbows in pipes, make these elbows as large as may be, so as to place as little obstruction to the free and easy flow of water as possible. Same considerations recommend the use of full way gate valves where required.

Ram should always be secured to heavy timbers or masonry and not left dependent merely upon pipe connections. This is important, as there is a constant concussion and strain upon the Ram, and it should be set on foundation as we recommend. Care should be taken to place a suitable strainer over the drive pipe to exclude all rubbish which might choke the pipes or Ram.

In the use of water from deep springs, it is sometimes difficult to keep an adequate supply of air in the air chamber. This can be avoided by drilling a very small hole in the side of the drive pipe near the Ram and inserting a little snifting valve, which is supplied with each Ram.

BATTERIES OF RAMS—We have frequent inquiries for Rams of greater capacity than we build, and to meet this demand offer a combination or battery of any number of Rams playing into a single discharge pipe, which possesses some advantages over the largest Rams which it might be practical or profitable to make.

At the same time, as above stated, these combinations offer certain advantages over Single Rams, for as each Ram receives its water through a separate drive pipe, the strain is not so great on pipe or Rams as if but one Ram were used, and then, too, in the event of accidents at any time the supply is not suspended, for each of the Rams acts independently of the others.

TABLE OF PROPORTIONATE HEAD OF FALL GIVING HIGHEST EFFICIENCY IN OPERATION OF HYDRAULIC RAMS.

To deliver Water to Height of	Place Ram under	Conducted through	*Any size Ram may be operated under these conditions and will afford the following approximate delivery :
20 Feet above Ram.	3 Feet Head of Fall.	† 30 Feet of Drive Pipe.	No. 2 require 2 to 3 gals. per min. and del. 10 to 15 gals. per hr.
30 " " "	4 " " "	30 " " "	" 3 " 2 to 4 " " " 10 to 20 " "
40 " " "	5 " " "	40 " " "	" 4 " 3 to 7 " " " 15 to 35 " "
50 " " "	7 " " "	50 " " "	" 5 " 6 to 12 " " " 30 to 60 " "
60 " " "	8 " " "	60 " " "	" 6 " 11 to 20 " " " 65 to 100 " "
80 " " "	10 " " "	80 " " "	" 7 " 18 to 35 " " " 90 to 175 " "
100 " " "	14 " " "	100 " " "	" 8 " 30 to 60 " " " 150 to 300 " "
120 " " "	17 " " "	125 " " "	

† Where necessary head of fall cannot be had in length of drive pipe given, the same results can be secured by conveying water any distance necessary and placing an open stand pipe in line of drive pipe at point 50 to 75 feet (as required) from Ram.

* It is assumed that the smaller Rams will not be selected for extreme high lift, as the friction loss of water in a small drive and discharge pipe renders their use impracticable.

Larger length of drive pipe may be used on larger Rams.

Where water supply will permit, always select Ram of ample size for requirements.

GOULDS IMPROVED HYDRAULIC RAMS.

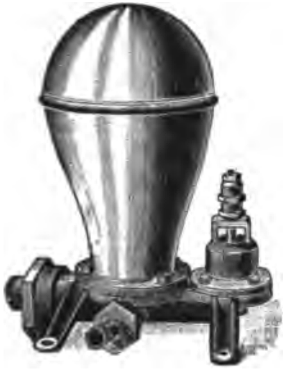


FIG. 345

FIG. 345. SIZES, PRICES, ETC.

Size.	Supply per Minute to Operate Ram.	Length of Drive Pipe, Feet.	PIPES.		Cipher.	*PRICE.
			Drive.	Discharge.		Leather Valve.
No. 2	1 to 2 gals.	50 to 75	¾ in.	½ in.	Evade	$9.00
" 3	2 to 4 "	50 to 75	1 "	½ "	Evan	11.00
" 4	3 to 7 "	50 to 100	1¼ "	¾ "	Event	14.00

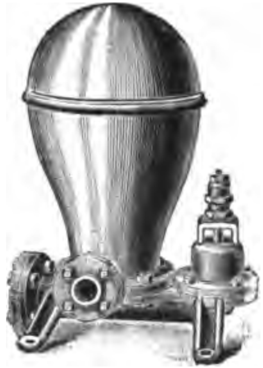


FIG 345½

FIG. 345½. SIZES, PRICES, ETC.

Size.	Supply per Minute to Operate Ram.	Length of Drive Pipe, Feet.	PIPES.		Cipher.	*PRICE.
			Drive.	Discharge.		With Leather Valve.
No. 5	6 to 10 gals.	50 to 150	2 in.	1 in.	Exabub	$22.00
" 6	11 to 25 "	50 to 200	2½ "	1¼ "	Fabida	40.00
" 7	20 to 40 "	50 to 200	3 "	1½ "	Fabief	75.00
" 8	25 to 75 "	50 to 200	4 "	2 "	Fabift	125.00

*Leather Valve under Air Chamber.

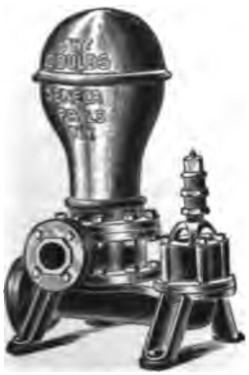


FIG. 346½

FIG. 346½. SINGLE RAM. SIZES, PRICES, ETC.

Size.	Supply per Minute to Operate Ram.	Length of Drive Pipe, Feet.	PIPES.		Cipher.	PRICE.
			Drive.	Discharge.		Brass Spring Valve.
No. 6	11 to 25 gals.	50 to 200	2½ in.	1¼ in.	Exabuck	$45.00
" 7	20 to 40 "	50 to 200	3 "	1½ "	Exabude	80.00
" 8	25 to 75 "	50 to 200	4 "	2 "	Exacat	130.00

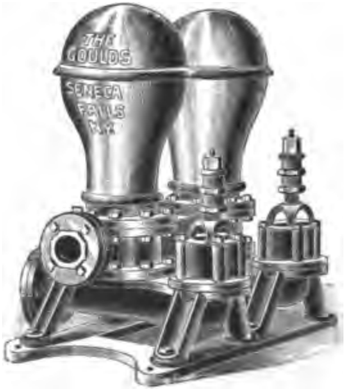


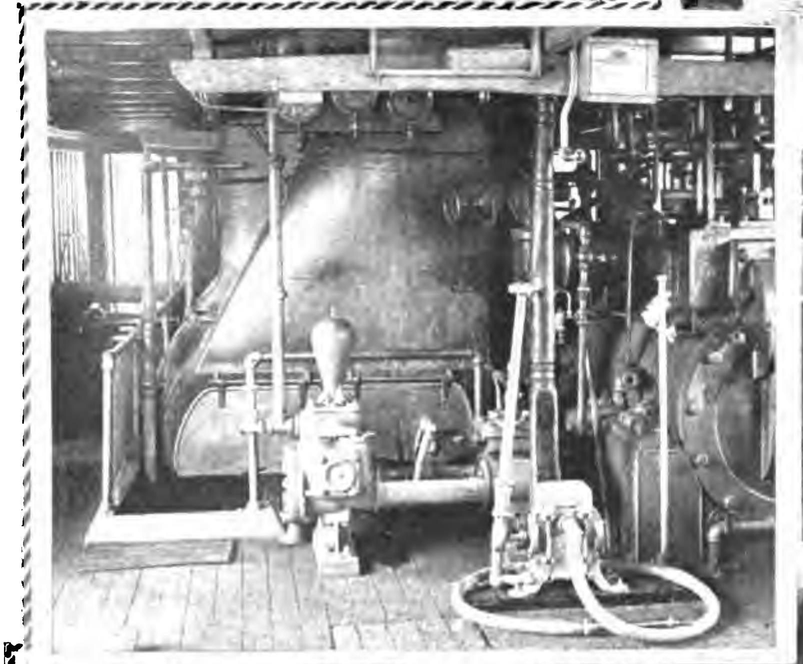
FIG. 346

FIG. 346. DOUBLE RAM. SIZES, PRICES, ETC.

Size.	Supply per Minute to Operate Ram.	Length of Drive Pipe, Feet.	PIPES.		Cipher.	PRICE.
			Drive.	Discharge.		†Brass Spring Valve.
No. 6	22 to 50 gals.	50 to 200	2½ in.	1½ in.	Exalt	$90.00
" 7	40 to 80 "	50 to 200	3 "	2 "	Excel	160.00
" 8	50 to 150 "	50 to 200	4 "	2½ "	Exert	260.00

†Brass Spring Valve under Air Chamber.

Fig. 345 can be fitted for wrought-iron or lead pipe, as ordered; Fig. 345½ for wrought-iron pipe only.



Double-Acting Force Pumps

of "Alert" and "Challenge" types have a general use for raising water in residences, on boats, around wharves, etc.

"Deluge" and Diaphragm Lift Pumps are used almost exclusively on vessels as illustrated.

See pages 139 to 147.

GOULDS "ALERT" DOUBLE-ACTING FORCE PUMP.

WITH IRON OR BRASS-LINED CYLINDER.

The "Alert" Double-Acting Force Pump is similar to the "Challenge," which we were first to build and popularize, but, instead of the expensive composition valves and valve seats, this Pump has leather valves.

The valves are all grouped together under the air chamber and can be readily exposed to view by unscrewing the bolts at side. Suction and discharge openings are on opposite sides of cylinder.

We always fit suction and discharge for sizes of iron pipe named below, but can fit them for lead pipe or hose, if so ordered, at extra charge for Nos. 2 and 4 of $2.00, and Nos. 6 and 8 of $2.50.

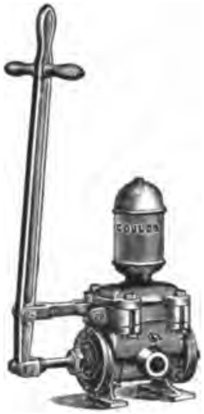


FIG. 747

FIG. 747. SIZES, PRICES, ETC.

No.	Dia. Cal.	Stroke.	Capacity per Rev.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.	
							Cipher.	Price.	Cipher.	Price.
2	2½ in.	5 in.	.21 gal.	1¼ in. pipe	1 in. pipe	75 ft.	Vareb	$16.00	Basebal	$18.50
4	3 "	5 "	.31 "	1¼ "	1 "	75 "	Varech	18.00	Baseboa	21.00
6	3½ "	5 "	.42 "	1½ "	1¼ "	50 "	Vivesu	20.00	Baselar	23.50
8	4 "	5 "	.54 "	1½ "	1¼ "	50 "	Vivid	24.00	Baseles	28.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

GOULDS "ALBANY" DOUBLE-ACTING FORCE PUMP.

WITH BRASS VALVES AND SEATS.

Fig. 1255, like our "Alert" and "Challenge" Pumps, has long vertical lever. Works easily. Is largely used for filling tanks. Valves are brass, on brass seats, and are located at ends of cylinder, easy of access. Cylinders either iron or brass-lined, as ordered. Piston rod brass-cased. Piston has two cupped leathers. Ample air chamber is provided.

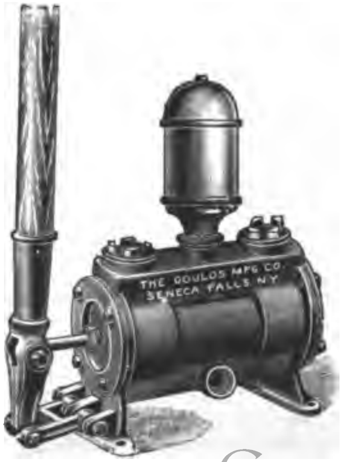


FIG. 1255

FIG. 1255 SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Rev.	Suction.	Discharge.	*Lift and Force.	Iron.		Brass-Lined.	
							Cipher.	Price.	Cipher.	Price.
4	3 in.	5 in.	.31 gal.	1¼ in. pipe	1 in. pipe	75 ft.	Palpops	$18.00	Palqem	$21.00
8	4 "	5 "	.54 "	1½ "	1¼ "	50 "	Palpug	24.00	Palqid	28.00
12	5 "	5 "	.85 "	2 "	2 "	50 "	Palqal	30.00	Panifo	35.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

"ROCKER" DUPLEX DOUBLE-ACTING FORCE PUMPS.

WITH BRACKETS AND DETACHABLE STANDARDS.

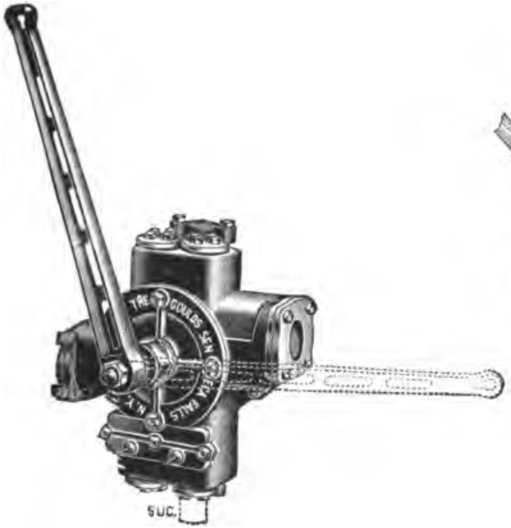
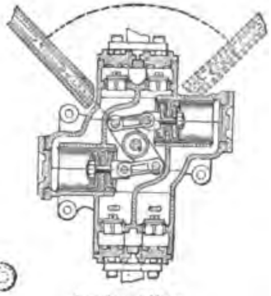

THE GOULDS M'F'G CO. SENECA FALLS N.Y.
SUC.

FIG. 1213



Sectional View.

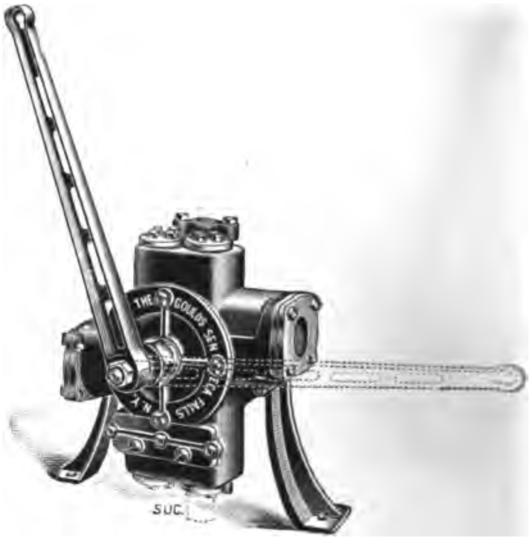

THE GOULDS M'F'G CO. SENECA FALLS N.Y.
SUC.

FIG. 1214

Figs. 1213 and 1214, "Rocker" Force Pumps, have a general application for all purposes where a **Hand Force Pump** may be employed. They are provided with two double-acting pistons, each fitted with **double cup leathers**, working in brass-lined cylinders. The suction and discharge valves and valve seats are **brass, and** are accessible without disturbing pipe connections. Lever is long, of malleable iron and may be **operated in** a vertical or horizontal position. The working parts of the Pump are so nicely arranged that the **slightest** movement of the lever causes the water to flow at once. Suction and discharge regularly fitted for iron **pipe.** Fitted for hose or lead pipe to order at extra price. For pumping wines, acids or hot water, Pumps **should** be specially fitted. This we do to order Fig 1213 has Brackets for attaching to wall or plank. Fig. 1214 has Brackets, also detachable legs or standards.

FIGS. 1213 AND 1214. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Capacity per Revolution.	Approximate Capacity per Minute.	Suction and Discharge.	*Lift and Force.	Fig. 1213.		Fig. 1214.	
						Cipher.	Brass-Lined Cylinder.	Cipher.	Brass-Lined Cylinder.
2	2½ in.	.21 gals.	10 to 16 gals.	1 in. pipe	175 ft.	Metobe	$25.00	Moawed	$27.25
4	3 "	.33 "	18 to 24 "	1¼ "	175 "	Metock	28.00	Moawig	[illegible]
6	3½ "	.60 "	33 to 40 "	1½ "	150 "	Metuma	31.00	Moawen	[illegible]
8	4 "	.82 "	40 to 48 "	2 "	150 "	Metund	37.00	Moawub	[illegible]

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

"ROCKER" DUPLEX DOUBLE-ACTING FORCE PUMPS.

MOUNTED ON STANDARDS, WITH OR WITHOUT AIR CHAMBER.

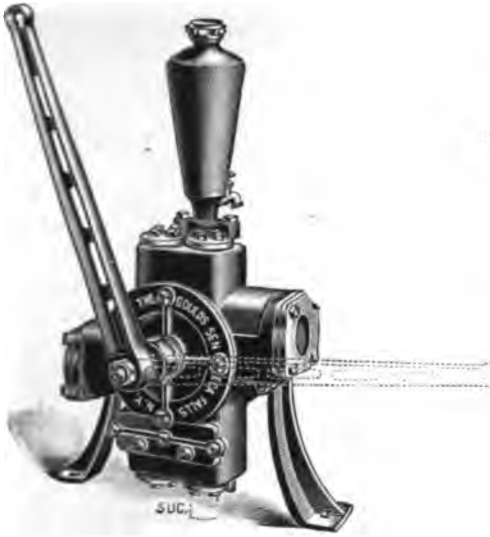
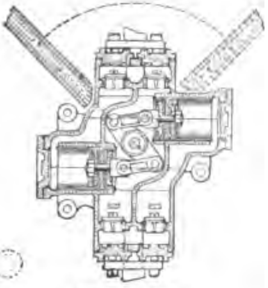


FIG. 1215



Sectional View.

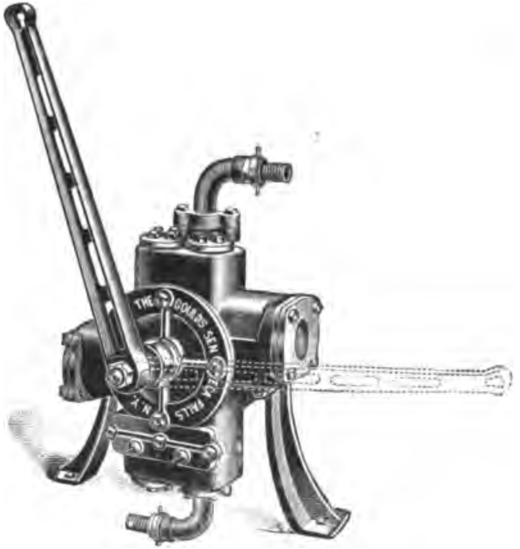


FIG. 1219

General description of "Rocker" Force Pumps and their construction is given on preceding page. Pumps with legs or standards also have brackets by which they can be attached to wall or plank.

Fig. 1215 has air chamber and cock spout. So arranged, these Pumps provide for water being drawn at spout or forced above to tank. Suction and top of air chamber regularly fitted for iron pipe. Fitted for lead pipe or hose to order.

Fig. 1219 is same as Fig. 1214, on preceding page, with addition of suction and discharge elbows and iron couplings. Iron pipe of same size can be attached to end of elbow by removing hose coupling.

FIG. 1215. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Capacity per Revolution.	Approximate Capacity per Minute.	Suction.	DISCHARGES.		*Lift and Force.	Cipher.	Brass Lined Cylinder.
					Top of Air Chamber.	Nose of Cock.			
2	2½ in.	.21 gals.	10 to 16 gals.	1 in. pipe	1 in. pipe	1 in. hose.	175 ft.	Mobuso	$28.50
4	3 "	.33 "	18 to 24 "	1¼ "	1¼ "	1 "	175 "	Mobvab	32.00
6	3½ "	.60 "	33 to 40 "	1½ "	1½ "	1 "	150 "	Mobvit	35.00
8	4 "	.82 "	40 to 48 "	2 "	2 "	1 "	150 "	Mobvox	42.00

FIG. 1219. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Capacity per Revolution.	Approx. Capacity per Minute.	Suction and Discharge.	*Lift and Force.	Cipher.	Brass Lined Cylinder.
2	2½ in.	.21 gals.	10 to 16 gals.	1 in. hose	175 ft.	Moonfat	$31.00
4	3 "	.33 "	18 to 24 "	1¼ "	175 "	Moonfem	35.00
6	3½ "	.60 "	33 to 40 "	1½ "	150 "	Moongal	39.00
8	4 "	.82 "	40 to 48 "	2 "	150 "	Moonget	45.00

*Total lift and force from water to point of discharge, Pump not more than 25 feet above water.

GOULDS "CHALLENGE" DOUBLE-ACTING FORCE PUMPS.

WITH BRASS VALVES.

Fig. 470 represents our "Challenge" Double-Acting Force Pump of great compactness and power, for use on shipboard, wharves, around factories, mills, warehouses, etc., and in residences for tank pumping. On all "Challenge" Pumps piston rods are brass-cased, valves and valve seats of brass, cylinders either brass-line or brass, therefore working parts are non-corrosive. O ships "Challenge" Pump performs the three-fold pu pose of filling boilers when cold, washing down deck and satisfy government inspection as to fire protectio

In mines these Pumps are almost invaluable, they are unaffected by mine water and will force great elevation.

Fig. 562 represents our "Challenge" Double-Acti Force Pump, described above, in a larger form, a arranged with double levers. This Pump has only o stuffing box, so that it is less liable to leak than wi two, and in case of such an accident one set of valv would be in readiness at all events, and thus arrang can be operated, too, with much less friction and labo For use on ship wharves, about factories, mills, mine warehouses, etc., it is capable of inestimable service. We regularly fit iro Pumps furnished with fibrous or metallic-packed pistons to order.

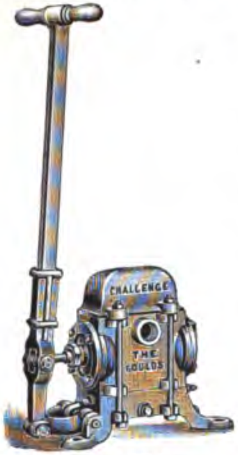


FIG. 470

FIG. 470. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Rev.	Suction.	Discharge.	* Lift and Force.	BRASS-LINED CYL.	
							Cipher.	Price.
2	2½ in.	4½ in.	.19 gal.	1¼ in. hose	1 in. hose	150 ft.	Grande	$27.00
4	3 "	4½ "	.28 "	1¼ "	1 "	150 "	Grapery	28.00
8	4 "	4½ "	.49 "	1½ "	1¼ "	100 "	Grab	30.00
12	5 "	5 "	.85 "	2 "	1½ "	100 "	Grace	40.00
16	6 "	5 "	1.22 "	2½ "	2 "	100 "	Vareibj	50.00

FIG. 562. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Rev.	Suction.	Discharge.	* Lift and Force.	BRASS-LINED CYL.	
							Cipher.	Price.
8	4 in.	4½ in.	.49 gal.	1½ in. hose	1¼ in. hose	125 ft.	Vareidz	$35.00
12	5 "	5 "	.85 "	2 "	1½ "	125 "	Leader	45.00
16	6 "	5 "	1.22 "	2½ "	2 "	125 "	Leaflet	55.00

125.00 ooky Looma 185.0

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.
† Brass Pumps are made entirely of brass, except levers, links and bolts.

1889
27
1862

"MONITOR" D. A. SUCTION AND FORCE PUMP COMBINED.

WITH BRASS-LINED CYLINDER AND METAL VALVES

The cut exhibits our Double-Acting "Monitor" Suction Pump, for elevating large quantities of water from the holds of vessels, or from wells, cisterns, reservoirs, etc. It is essentially a Brass Pump, as the cylinder is lined with that metal, while the piston, piston rod, valves and their seats are made of the best composition metal. By the addition of a very few and inexpensive appliances, this Pump can be converted into a very powerful engine, with a capacity of forcing a good-sized stream of water a long distance, thus combining in one machine, and at a little more cost, a Lifting and Force Pump when required. On shipboard this Pump can be set as Bilge Pumps usually are, with the iron suction pipe extending into the hold, and by very simple changes a Force Pump can be had for extinguishing fires, washing decks, etc. One Pump, therefore, performs the functions of two, and we guarantee that in either capacity it will give all the satisfaction that either of two Pumps would, designed specially for only one purpose.

Under the air chamber, which is easily detached, lie the upper valves, while by unscrewing the four nuts that secure the bed plate to the cylinder, the cylinder can be raised, and the lower valves are exposed. The position of the Pump or the pipes have, therefore, in no way to be disturbed should the valves become clogged and require examination. We can most heartily commend this Pump to our friends. Fitted for hose, unless otherwise ordered, but we can fit for iron pipe if so desired. Pumps furnished with fibrous or metallic packed piston to order.

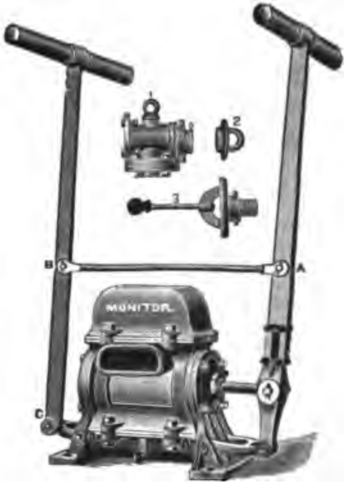


FIG. 581.

FIG. 581. SUCTION AND BILGE PUMP. SIZE, PRICE, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Revolution.	Suction.	Cipher.	Brass-Lined.
16	6 in.	5 in.	1.22 gal.	2½ in. hose	Melt	$55.00

FIG. 582. COMBINED FORCE PUMP. SIZE, PRICE, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	*Lift and Force.	Cipher.	Brass-Lined.
16	6 in.	5 in.	1.22 gal.	2½ in. hose	2 in. hose	125 ft.	Mend	$60.00

* Total lift and force from supply to point of delivery.

GOULDS "CHALLENGE" DOUBLE-ACTING FORCE PUMP.

WITH PITMAN FOR MACHINE POWER.

Fig. 604 represents our "Challenge" Double-Acting Force Pump, mounted on plank, with pitman, guide and guide rod for attaching to face plate and crank pin by means of connecting rod. May be operated by Figs 597 or 597½, Horse Powers (page 94), or other machine power. They can be run up to a maximum of 40 to 50 revolutions per minute, though 30 would be better. Both suction and discharge fitted for gas pipe, unless otherwise ordered.

Pump furnished with fibrous or metallic packed piston to order.

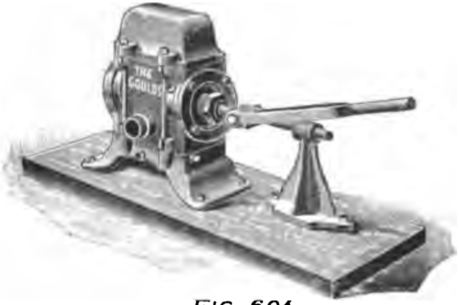


FIG. 604

FIG. 604. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Rev.	Suction.	Discharge.	BRASS-LINED.		BRASS CYL.	
						Cipher.	Price.	Cipher.	Price.
2	2½ in.	4½ in.	.19 gal.	1¼ in. pipe	1 in. pipe	**Molec**	$30.00	**Repert**	$58.00
4	3 "	4½ "	.28 "	1¼ "	1 "	**Molty**	31.00	**Repesu**	58.00
8	4 "	4½ "	.49 "	1½ "	1¼ "	**Monkish**	33.00	**Rideck**	63.00
12	5 "	5 "	.85 "	2 "	1½ "	**Moody**	45.00	**Rideds**	95.00
16	6 "	5 "	1.22 "	2½ "	2 "	**Moon**	55.00	**Rideer**	125.00

GOULDS BRASS TWO-CYLINDER FORCE PUMP.

WITH DETACHABLE IRON LEVER.

Fig. 773 represents our Two-Cylinder Force Pump with brass cylinders, check valve, rods and stuffing boxes, making it practically a brass Pump. This Pump has two vertical working pistons actuated by one lever, having the full effect of a double-acting Pump.

The suction and discharge are fitted for lead or iron pipe, as ordered.

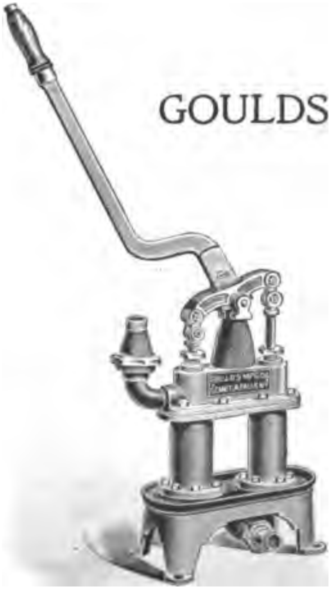


FIG. 773

FIG. 773. SIZES, PRICES, ETC.

No.	Diameter Cylinders.	Stroke.	Capacity per Rev.	Suction.	Discharge.	*Lift and Force.	Cipher.	Brass.
0	2 in.	4 in.	.11 gal.	1¼ in. pipe	1 in. pipe	150 ft.	**Vendor**	$30.00
2	2½ "	4 "	.17 "	1¼ "	1¼ "	125 "	**Vendue**	35.00
4	3 "	4 "	.24 "	1½ "	1¼ "	100 "	**Veneer**	45.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

GOULDS "THRESHER" DOUBLE-ACTING FORCE PUMP.

FOR FILLING THRESHER TANKS AND GENERAL USE.

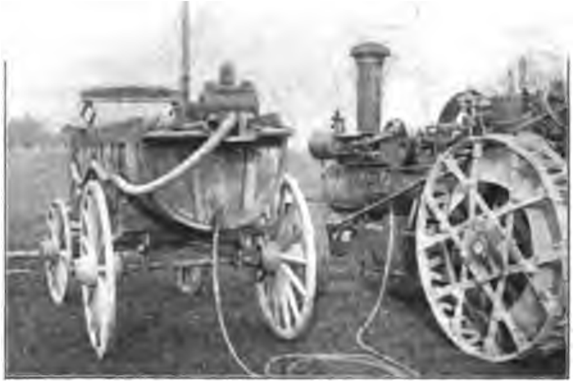


Fig. 1145 is perhaps better than any other Pump adapted to the requirements of Threshermen. Easy of operation and of great capacity, it saves much time and labor in filling tank wagons. Being a Force Pump, it is used to fill the boiler when cold. Its construction is most simple and all parts are easily removable. Caps over discharge valves are so constructed that they can be unscrewed by any stick or rod. Valves are all metal, leather-faced. Solid piston is packed with double crimped leathers. Piston rod of polished steel works through Brass stuffing-box. Water ways are large and direct. Capacity of Pump is one to two barrels a minute, depending upon rapidity of operation. Aside from service suggested above, it is much used by contractors, etc. With each Pump is included Strainer, Hose Coupling and one pair Suction Hose Bands.

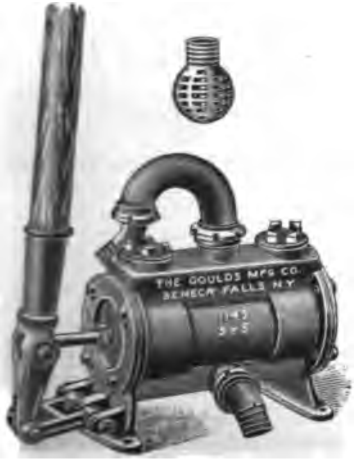

THE GOULDS MFG CO.
SENECA FALLS N.Y.
1145
5 x 5

FIG. 1145

FIG. 1145. SIZE, PRICE, ETC.

Fig. 1145.	Dia. Cyl.	Stroke.	Capacity per Rev.	†Suction.	†Discharge.	*Lift and Force.	Cipher.	Price.
Pump with Strainer, Hose Couplings and Clamps..................	5 in.	5 in.	.85 gal.	2 in. hose	1 in. hose	50 ft.	Gushab	$18.00
OUTFIT A...............	Fig. 1145, Thresher Tank Pump, with 15 feet 2-inch spiral wire suction hose. 12½ feet 1-inch 3-ply discharge hose, couplings, suction basket and nozzle, all complete..................						Gushik	40.00
OUTFIT B...............	Fig. 1145, Thresher Tank Pump, with 20 feet 2-inch spiral wire suction hose, 12½ feet 1-inch 3-ply rubber discharge hose. couplings, suction basket and nozzle, all complete..................						Gushod	45.00
OUTFIT C...............	Fig. 1145, Thresher Tank Pump, with 25 feet 2-inch spiral wire suction hose. 12½ feet 1-inch 3-ply discharge hose. couplings. suction basket and nozzle, all complete..................						Gushum	50.00
OUTFIT D...............	Fig. 1145, Thresher Tank Pump, with 25 feet 2 inch spiral wire suction hose, 25 feet 3-inch 1-ply discharge hose, couplings. suction basket and nozzle, all complete..................						Gushva	54.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

† When specially ordered we can fit suction for 2-inch pipe and discharge for 1½-inch iron pipe, without extra charge.

GOULDS "NEW DELUGE" SUCTION PUMP.

WITH BRASS-LINED CYLINDER AND REMOVABLE VALVES.

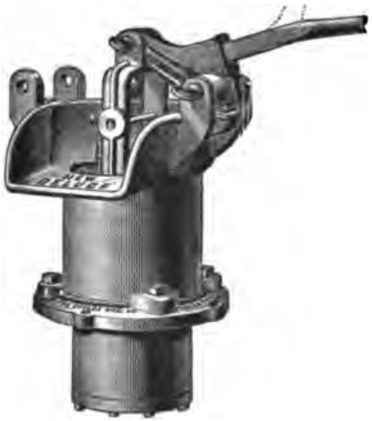


FIG. 829

Fig. 829 represents our improved "New Deluge" Pump, which is designed for shallow or small vessels of not more than 15 to 20 feet depth of hold; for contractors who wish to pump large quantities of water from excavations, etc.; for irrigation or any other purpose where a compact and capacious Pump is desired.

The cylinder is lined with brass, the valves rubber-faced and the lever socket made at such an angle that the bent wrought-iron lever when put in one side up is right for ordinary pumping, and by simply changing it to the other side up it becomes a vertical lever. This lever may also be worked from three different points, as shown by lugs in our cut.

The Pump has large valves accessible and removable by hand from above, while to the bottom of the base is bolted a flange which may be cut for any size pipe ordered, or changed for other sizes if desired.

FIG. 829. SIZES, PRICES, ETC.

Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Cipher.	Brass Lined.
6 in.	4 in.	.49 gal.	2½ in. pipe	20 ft.	Wakend	$23.00
8½ "	6 "	1.47 "	3 "	20 "	Waking	30.00

Can furnish 8½-inch by 6-inch Iron (not brass lined) Pump fitted 4-inch pipe, with special foot valve for pumping asphaltum, at $50.00 list.

GOULDS "NEW DELUGE" SUCTION PUMP.

WITH BRASS-LINED CYLINDER AND REMOVABLE VALVES.

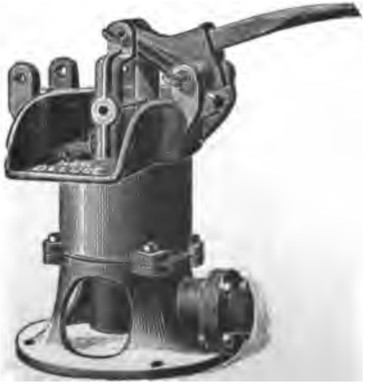


FIG. 836

Fig. 836 represents our "New Deluge" Pump described above, arranged with elevated base to be used above deck or foundation where it is desired to use hose suction or more convenient to make pipe connections in this manner. The suction flange is fitted for sizes of wrought-iron pipe given below, unless otherwise ordered, or can be cut hose gauge to take our regular suction half hose coupling, which is furnished at extra price.

FIG. 836. SIZES, PRICES, ETC.

Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Cipher.	Brass Lined.
6 in.	4 in.	.49 gal.	2½ in. pipe	20 ft.	Weaken	$24.00
8½ "	6 "	1.47 "	3 "	20 "	Weakeos	31.00

GOULDS NEW DIAPHRAGM SUCTION PUMP.

WITH BOTTOM SUCTION FOR PIPE.

Fig. 1222 represents the most approved design of Diaphragm Pump. Lever is reversible and can be used at back of the Pump, or on either side. Lower valve is of metal, rubber faced, easy of access and readily removable. Waterways are large and easy. Diaphragm is made of *best quality* rubber. Pump combines simplicity with strength. In these Pumps the diaphragm takes the place of the plunger. They are particularly adapted for pumping water containing mud, sand, gravel, sewage, coal, chips or any semi-fluid matter. Pumps with bottom suction are used in places where they can remain stationary, as on vessels, barges, dredges, wharves, etc. We regularly fit as in our table below.

FIG. 1222. SIZE, PRICE, ETC.

Diameter Diaphragm.	Suction.	Approximate Capacity.	Cipher.	Price.
12½ in.	3 in. pipe	1 gal. per Stroke, 2500 to 3500 per hour	Todeka	$20.00

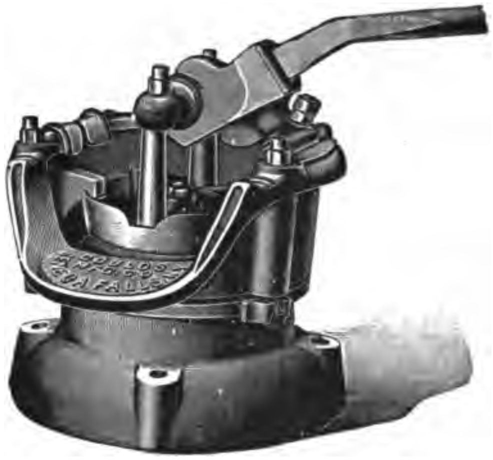


FIG. 1222

GOULDS NEW DIAPHRAGM SUCTION PUMP.

WITH SIDE SUCTION FOR HOSE OR PIPE.

Fig. 1223, New Diaphragm Pump, is similiar in general construction to Fig. 1222, described above, differing only in that it has side suction, and therefore a different kind of suction valve. This valve is brass, rubber-faced, resting upon an inclined seat, thus affording smallest obstruction to passage of any matter. Unless otherwise ordered, suction is cut 3-inch pipe thread, which is also the thread now generally used on hose couplings of that size. We can cut to any special hose gauge, if ordered. Suction hose and couplings furnished at market prices. Special brass hose couplings, suction hose and strainers furnished at market prices when ordered.

FIG. 1223. SIZE, PRICE, ETC.

Diameter Diaphragm	Suction.	Approximate Capacity.	Cipher.	Price.
12½ in.	3 in. hose or pipe	1 gal. per Stroke 2500 to 3500 per hour	Todels	$24.00

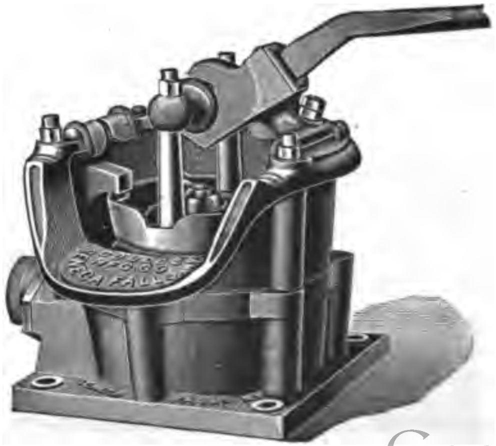


FIG. 1223

GOULDS ODORLESS DIAPHRAGM FORCE PUMP.

WITH LARGE AIR CHAMBER AND REVERSIBLE LEVERS.

Fig. 1161 illustrates our improved Odorless Diaphragm Force Pump, specially designed for pumping out sewers, cesspools, vaults, etc., or moving any semi-liquid matter which an ordinary Pump could not successfully handle. In this Pump a rubber diaphragm with special valve acts as plunger. Bronze valve seat and cover incase the inclined rubber-faced suction valve, offering least obstruction to passage of matter. The levers are wrought-iron and reversible. The stroke is short and operates easily. Pump has convenient hand-hole for getting at interior without removing air-chamber. Suction and discharge regularly fitted for iron-pipe, but can cut to any special hose gauge. We can furnish hose and couplings to order.

FIG. 1161. SIZE, PRICE, ETC.

Diameter Diaphragm.	Stroke.	Capacity per Stroke	Suction.	Discharge.	Cipher.	Price.
13 in.	2½ in.	1.47 gals.	3 in. pipe	3 in. pipe	Zutad	$45.00

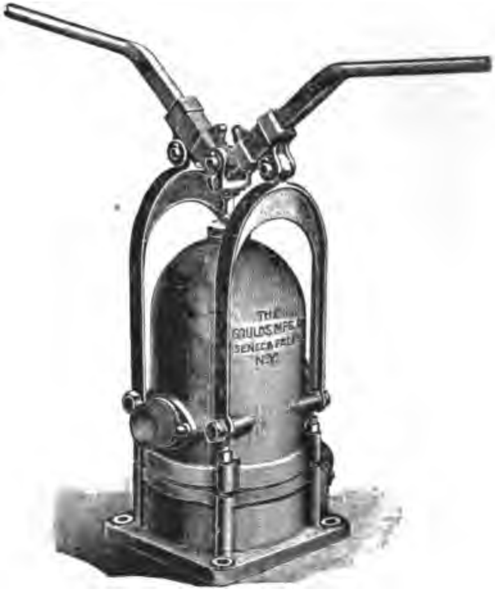


FIG. 1161

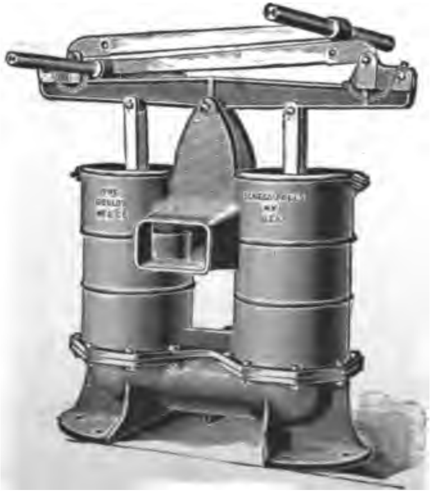


FIG 1162

TWO-CYLINDER SUCTION PUMP.

WITH FOLDING LEVERS.

The cut represents our new Two-Cylinder Suction or Contractors' Pump. This Pump has large capacity, and for pumping out pits, mines, quarries, etc., will render most excellent service. These pumps can be mounted on a truck with wheels and drag handle, when so ordered, at a small additional expense. The levers can be folded into a small space, as shown in illustration. The suction is always fitted for iron pipe unless ordered to the contrary, although can be arranged for suction hose when so specified.

FIG. 1162. SIZE, PRICE, ETC.

Dia. Cyls.	Stroke.	Capacity per Stroke.	Suction.	Cipher.	Price.
12 in.	8 in.	7.83 gals.	6 in. pipe	Tickist	$140.00

GOULDS SHIP'S MAIN AND BILGE PUMP.

WITH WOOD LEVERS.

The cut represents our improved Ship's Main and Bilge Pump, for use upon shipboard, in mines and upon plantations for irrigation. It has a reversible top, heavy strong bed-plate, poppet valves of new design; the suction pipe is attached to the vacuum chamber above the valves, so that they are always submerged; the plungers are always made of brass, with large waterways. We also furnish two and three-way cocks, at extra list price. See under Fig. 579.

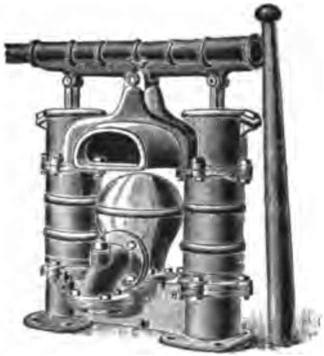


FIG. 578

FIG. 578. SIZES, PRICES, ETC.

Diameter Cylinders.	Stroke.	Capacity per Rev.	Suction.	Lift.	Iron Cylinders.		Brass-Lined Cylinders.	
					Cipher.	Price.	Cipher.	Price.
5½ in.	6½ in.	1.34 gal.	3 in. pipe	25 ft.	Lestal	$55.00	Lidda	$75.00
5½ "	8 "	1.64 "	3 "	25 "	Letada	60.00	Lien	80.00
6 "	8 "	1.96 "	3 "	25 "	Levy	70.00	Maw	90.00

GOULDS SHIP'S MAIN AND BILGE PUMP.

WITH WROUGHT-IRON EXTENSION LEVERS.

Fig. 579 represents our improved Ship's Main and Bilge Pump, fully described above, arranged with wrought-iron extension levers, so that a large force of men can be employed in operating it. We also furnish two and three-turn brass cocks with elbows, where a suction pipe is wanted for each side of the keelson.

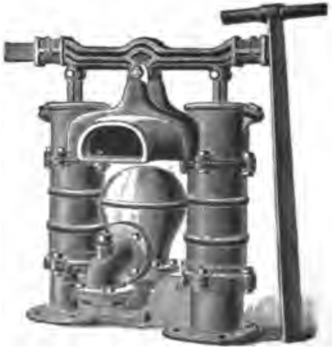


FIG. 579

FIG. 579. SIZES, PRICES, ETC.

Diameter Cylinder.	Stroke.	Capacity per Rev.	Suction.	Lift.	Iron Cylinders.		Brass-Lined Cylinders.	
					Cipher.	Price.	Cipher.	Price.
5½ in.	6½ in.	1.34 gal.	3 in. pipe	25 ft.	Maya	$60.00	Meada	$80.00
5½ "	8 "	1.64 "	3 "	25 "	Mazed	65.00	Meal	85.00
6 "	8 "	1.96 "	3 "	25 "	Mazy	75.00	Meaned	95.00
8 "	8 "	3.48 "	4 "	25 "	Mazera	115.00	Meant	140.00

Brass 2-way cock, with 2 elbows for 2 suction pipes	$18.00 net
Brass 3-way cock, with 2 elbows for 3 suction pipes	20.00 net

GOULDS TWO-CYLINDER FORCE PUMPS.

WITH WOOD OR WROUGHT LEVERS.

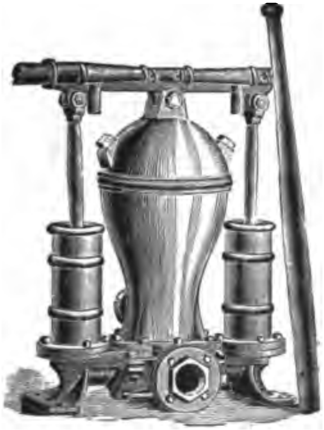


FIG. 518

Fig. 518 is a powerful Two-Cylinder Force Pump, which is double-acting in operation, simple and compact in build, all parts being readily accessible, and can be operated by wood levers or power, as desired. The suction is always fitted for wrought-iron pipe, and the discharge for hose, unless otherwise ordered; can fit both ends for wrought-iron pipe, or both ends for hose, if ordered.

Fig 520 represents our Two-Cylinder Suction and Force Pump described above, arranged with extension levers. When these levers are put in place, they afford room for many men to work, and render this pump a most powerful engine for forcing water on fires, or supplying it for many uses about factories, ware-houses, wharves, etc.

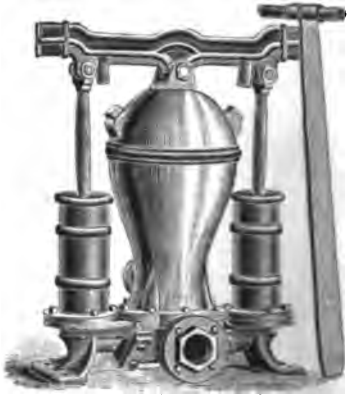


FIG. 520

FIG. 518. SIZES, PRICES, ETC

No.	Diameter Cylinder.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	*Lift and Force.	IRON CYLINDERS.		BRASS-LINED CYLINDERS.		BRASS CYLINDERS.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
4	3 in.	6½ in.	.40 gal.	1½ in. pipe	1¼ in. hose	100 ft.	Hoax	$35.00	Holt	$42.00	Hoot	$55.00
6	3½ "	6½ "	.54 "	2 "	1½ "	75 "	Hock	40.00	Home	50.00	Hops	63.00
8	4 "	8 "	.87 "	2½ "	2 "	75 "	Hod	45.00	Honel	55.00	Hopel	75.00
10	4½ "	8 "	1.10 "	2½ "	2 "	75 "	Hoe	52.50	Hood	67.50	Hose	87.50
12	5 "	8 "	1.36 "	2½ "	2 "	75 "	Hold	60.00	Hoofit	75.00	Hostal	100.00
16	6 "	8 "	1.96 "	4 "	2½ "	50 "	Hole	85.00	Hoopla	105.00	Hour	135.00

FIG. 520. SIZES, PRICES, ETC

No.	Diameter Cylinder.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	*Lift and Force.	IRON CYLINDERS.		BRASS-LINED CYLINDERS.		BRASS CYLINDERS.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
4	3 in.	6½ in.	.40 gal.	1½ in. pipe	1¼ in. hose	100 ft.	Visitab	$45.00	Visne	$52.00	Vitalize	$65.00
6	3½ "	6½ "	.54 "	2 "	1½ "	75 "	Visitan	50.00	Visor	60.00	Vitally	73.00
8	4 "	8 "	.87 "	2½ "	2 "	75 "	Visited	55.00	Vista	65.00	Vitals	85.00
10	4½ "	8 "	1.10 "	2½ "	2 "	75 "	Visitfy	62.50	Visual	77.50	Vitiate	97.50
12	5 "	8 "	1.36 "	2½ "	2 "	75 "	Visitor	70.00	Vital	85.00	Vitious	110.00
16	6 "	7 "	1.96 "	4 "	2½ "	50 "	Visive	95.00	Vitailt	115.00	Vitreos	145.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water.

GOULDS TWO-CYLINDER FORCE PUMPS.

WITH WOOD LEVERS OR FOLDING BRAKES.

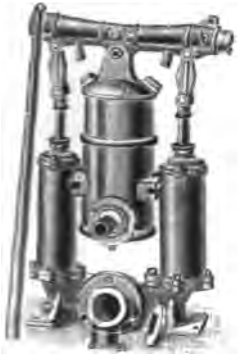


FIG. 283

Fig. 283 exhibits a new Two-Cylinder Force Pump, with wood levers, etc., and may be worked by hand or machinery, while Fig. 284 is the same Pump with folding brakes, which are large enough to admit four or six men working upon them. Pumps are made with brass-cased piston rods, brass plungers, valves and stuffing boxes.

The valve at the bottom of the Cylinder is double and improved in its construction, and can be readily tripped or opened by pressing down the lever until it strikes the top of the air chamber.

The Pump is simple in its construction, not liable to get out of order, and by the directness of its action and consequent freedom from friction is a most efficient and powerful Pump.

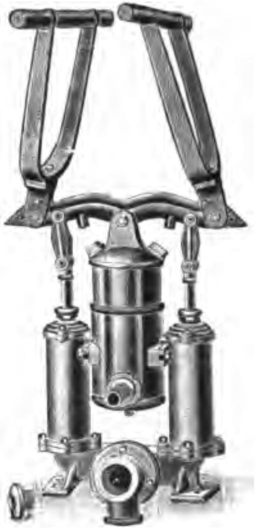


FIG. 284

FIG. 283. SIZES, PRICES, ETC.

No.	Diameter Cylinders.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	*Lift and Force.	IRON CYLINDERS.		BRASS-LINED CYL.		BRASS CYLINDERS.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
2	2½ in.	6 in.	.26 gal.	2 in. pipe	1¼ in. hose	125 ft.	Dazed	$38.00	Polmegs	$45.00	Debar	$58.00
4	3 "	6 "	.37 "	2 "	1¼ "	125 "	Dazzle	40.00	Polmeho	47.00	Debase	60.00
6	3½ "	6 "	.50 "	2½ "	1¼ "	100 "	Deafa	47.00	Polmeja	57.00	Debit	70.00
8	4 "	6 "	.65 "	2½ "	1½ "	100 "	Deale	55.00	Polmeks	65.00	Debta	85.00
10	4½ "	6 "	.83 "	3 "	2 "	100 "	Deam	65.00	Polmelb	80.00	Debut	100.00
12	5 "	8 "	1.36 "	4 "	3 "	75 "	Balse	75.00	Polmem	90.00	Benec	115.00
16	6 "	8 "	1.96 "	4 "	3 "	75 "	Dear	100.00	Polmeno	120.00	Decay	150.00

FIG. 284. SIZES, PRICES, ETC.

No.	Diameter Cylinders.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	*Lift and Force.	IRON CYLINDERS.		BRASS-LINED CYL.		BRASS CYLINDERS.	
							Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
2	2½ in.	6 in.	.26 gal.	2 in. pipe	1¼ in. hose	125 ft.	Deck	$53.00	Polmeop	$60.00	Deep	$73.00
4	3 "	6 "	.37 "	2 "	1¼ "	125 "	Decker	55.00	Polmequ	62.00	Deeply	75.00
6	3½ "	6 "	.50 "	2½ "	1¼ "	100 "	Decoyed	62.00	Polmics	72.00	Deera	85.00
8	4 "	6 "	.65 "	2½ "	1½ "	100 "	Decry	70.00	Polmid	80.00	Defer	100.00
10	4½ "	6 "	.83 "	3 "	2 "	100 "	Deedo	80.00	Polmifu	95.00	Defix	115.00
12	5 "	8 "	1.36 "	4 "	3 "	75 "	Belted	90.00	Primmo	105.00	Blown	130.00
16	6 "	8 "	1.96 "	4 "	3 "	75 "	Deema	120.00	Primnu	140.00	Deftly	170.00

*Total lift and force from supply to point of delivery, Pumps not more than 25 feet above water.

GOULDS HAND AND POWER ROTARY FORCE PUMP.

Probably in no class of manufacture is the axiom, "The best is the cheapest," better exemplified than in that of Hand and Power Rotary Force Pumps.

Having been extensively engaged for the past 35 years in the manufacture and sale of these Pumps, we have profited by our experience, and feel justified, by the unsolicited testimony of our patrons and our constantly increasing, sales in saying we are to-day making the largest and best line of these goods in the market. A Rotary Pump must be made with the utmost care and accuracy, or it is worthless — and it is these points of excellence, accomplished by our skilled labor and improved machinery, that have earned the enviable reputation of the "Goulds Rotary."

These Pumps will lift water as far as any piston Pump and give a constant uniform discharge.

When wanted for pumping hot liquids it is necessary that we should be advised of it, as we put in a metallic valve in that case. Bronze Pumps should always be used in distilleries, malt houses, etc.

The whole inside working and principle of our Pumps are obvious from the illustrations given below, in which Fig. 299 represents the cams used in our smaller Hand Pumps, and Fig. 300 those in our large Power Pumps.

VIEW OF GOULDS ROTARY PUMPS WITH CASE COVER REMOVED.

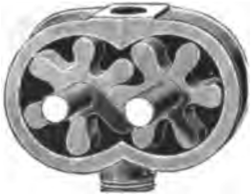


FIG. 299

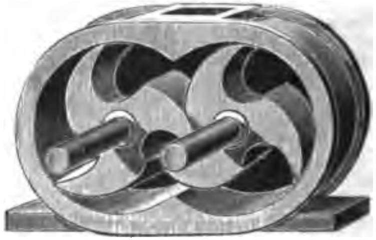


FIG. 300

The peculiar formation of these revolving cams or pistons was acquired after long experimenting and successful practice, and has demonstrated them to be of such a shape as to produce the very minimum of friction and wear with the greatest results.

The cases which receive these cams are engine lathe turned and bored and so perfectly true and smooth that the cams when in operation create almost a perfect vacuum and will "pick up" water quicker, for a long distance, and hold it better than any other Pump. The cams are not rough castings, "sand ground," as those in some inferior Pumps, but are carefully and accurately planed to mesh into each other and fit their case perfectly.

It is also a point worth noting that if a little good oil be put into the case of our Pumps before and after using at first, or simply pump air with this oil a few times, the cams become as hard upon the surface as fine tempered steel, and are almost unaffected by constant use afterwards.

Drip plugs are provided for draining Pumps in cold weather. To do this, turn the cams backward a single revolution to release all water.

GOULDS ROTARY FORCE PUMPS.

WITH BALANCE WHEEL FOR HAND POWER.

Fig. 297 represents one of our celebrated Hand Rotary Force Pumps. They are adapted for every place or purpose where a Lift and Force Pump can be used, and will pump from a well or cistern, or can be moved to any place where water is within suction distance and instantly operated.

Fig. 297½ Hand Rotary Pump is made in larger sizes than Fig. 297, and has higher base and larger balance wheel. The cam shaft is long enough to put another fly-wheel on, so that four men can work if necessary. Brass plugs are provided at top and bottom of case for letting out the water in cold weather. After taking out the plugs reverse the cams two or three times around so as to get the water down from the top. We would advise the use of a check valve at end of suction pipe, as it keeps the pipe always filled and renders the Pump ready for use with a single revolution. Constructive view of Rotary Pump is given on preceding page 152. By the addition of metallic lower valve, hot liquids can be handled as well as cold. Hot liquid must always flow to the Pump as the vapors prevent any Pump from making a vacuum and thereby "sucking" the liquid.

For wine or liquor a Bronze Pump should always be used, as it is unaffected by the action of acids. *Our Rotary Pumps are known in every country of the world as the very best made, and always give satisfaction.*

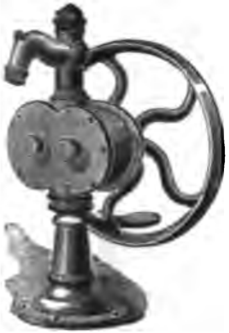


FIG. 297

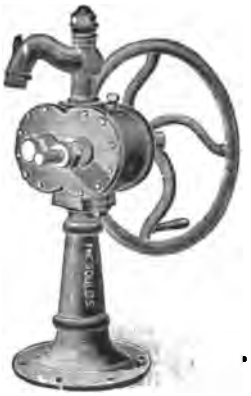


FIG. 297½

FIG. 297. SIZES, PRICES, ETC.

No.	Capacity per Minute 100 Revs.	Suction.	Discharges.		Diameter Balance Wheel.	*Lift and Force.	Iron.		Bronze Case and Cams.		†Bronze.	
			End of Spout.	Top of Spout.			Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	14½ in.	60 ft.	Ditty	$19.00	Dizzy	$41.00	Primnyx	$51.00
2	13 "	1¼ "	1 "	1 "	14½ "	60 "	Dive	22.00	Dock	46.00	Primob	56.00
3	17 "	1½ "	1¼ "	1¼ "	14½ "	60 "	Divan	26.00	Dodge	51.00	Primocs	63.00

FIG. 297½. SIZES, PRICES, ETC.

No.	Capacity per Minute 100 Revs.	Suction.	Discharges.		Diameter Balance Wheel.	*Lift and Force.	Iron.		Bronze Case and Cams.		†Bronze.	
			End of Spout.	Top of Spout.			Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	20 in.	60 ft.	Doer	$20.00	Doled	$42.00	Primodl	$52.00
2	13 "	1¼ "	1 "	1 "	20 "	60 "	Doff	23.00	Domel	47.00	Primof	57.00
3	17 "	1½ "	1¼ "	1¼ "	20 "	60 "	Doggel	27.00	Donad	52.00	Primoga	64.00
4	27 "	1½ "	1½ "	1½ "	20 "	60 "	Dogma	35.00	Done	65.00	Primul	87.00
4A	27 "	1½ "	1½ "	1½ "	36 "	60 "	Dogskin	39.00	Dolt	69.00	Primums	91.00
5	36 "	2 "	2 "	2 "	20 "	60 "	Doing	40.00	Doom	75.00	Primve	105.00
5A	36 "	2 "	2 "	2 "	36 "	60 "	Doily	44.00	Dolce	79.00	Primvit	109.00
6	45 "	2½ "	2½ "	2½ "	36 "	60 "	Voidues	50.00	Volture	100.00	Primvo	140.00

* Total lift and force from supply to point of delivery, Pump not more than 15 to 20 feet above water.
† "Bronze" Pumps have *all* parts coming in contact with the liquid of Bronze.

GOULDS ROTARY FORCE PUMPS.

Fig. 821 represents our Hand Rotary Force Pump arrranged with side suction for hose or lead pipe. Unlike other Rotary Pumps, which are tapped for wrought-iron pipe, that must pass up through bottom of standard or base, this one is conveniently arranged for hose suction at side. Many reasons will suggest themselves of the practical utility and convenience of this feature, as the suction hose may be dropped in any position readily, and as readily removed to another for immediate use.

Fig. 819 represents our Rotary Force Pump with outside bearing and pulley fly-wheel for power use This Pump may be used for any of the many services of Rotaries—for pumping hot or cold water, wines, liquors, etc., and is specially arranged for power use at a moderate expense. These Pumps are admirably adapted for use with high-speed gas, kerosene, or other engines, as the height of outside bearing admits the use of a very large pulley to compensate for speed of engine.

Always fitted for wrought-iron suction pipe.

Constructive view is shown on page 152.

By the addition of a metallic lower valve any of our Rotary Pumps will handle hot liquids Hot liquid must always flow to the Pump, as rising vapors prevent any Pump from forming a vacuum and thereby "sucking" the liquid. For handling wines, liquors or any acid substances, bronze Pumps should be used.

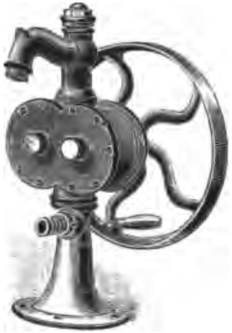


FIG. 821

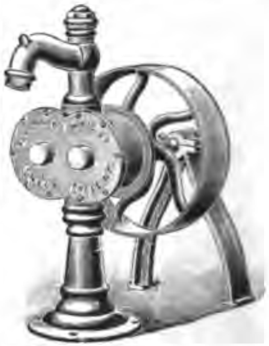


FIG. 819.

FIG. 821. SIZES, PRICES, ETC.

No.	Capacity per Minute, 100 Revs.	Suction.	Discharges.		Diameter Balance Wheel.	*Lift and Force.	Iron.		Bronze Case and Cams.	
			End of Spout.	Top of Spout.			Cipher.	Price.	Cipher.	Price.
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	14½ in.	60 ft.	Watest	$20.00	Wateyf	$42.00
2	13 "	1¼ "	1 "	1 "	14½ "	60 "	Wateta	23.00	Watfat	47.00
3	17 "	1½ "	1¼ "	1¼ "	14½ "	60 "	Wateub	27.25	Watfeg	52.25
4	27 "	1½ "	1½ "	1½ "	20 "	60 "	Watevs	36.25	Watgan	66.25
5	36 "	2 "	2 "	2 "	20 "	60 "	Watewd	41.75	Watges	76.75
6	45 "	2½ "	2½ "	2½ "	36 "	60 "	Watexr	51.75	Wathot	101.75

FIG. 819 SIZES, PRICES, ETC.

No.	Capacity per Min., 100 Revs.	Suction.	Discharges.		Pulley.	*Lift and Force.	Iron.		Bronze Case and Cams.		†Bronze.	
			End of Spout.	Top of Spout.			Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	12 x 3 in.	60 ft.	Vaguene	$25.00	Vahepa	$47.00	Primwu	$57.00
2	13 "	1¼ "	1 "	1 "	12 x 3 "	60 "	Vahab	28.00	Vaheqt	52.00	Prinap	62.00
3	17 "	1½ "	1¼ "	1¼ "	15 x 3 "	60 "	Vahela	32.00	Vaherls	57.00	Prinate	69.00
4	27 "	1½ "	1½ "	1½ "	16 x 4 "	60 "	Vahemy	45.00	Vahesm	75.00	Prineb	97.00
5	36 "	2 "	2 "	2 "	20 x 4 "	60 "	Vahenl	50.00	Vaheta	85.00	Prineco	115.00
6	45 "	2½ "	2½ "	2½ "	24 x 4 "	60 "	Vaheop	60.00	Vaheub	110.00	Prineds	150.00

* Total lift and force from supply to point of delivery, Pump not more than 20 feet above water.

† "Bronze" Pumps have *all* parts coming in contact with the liquid of bronze.

GOULDS ROTARY FORCE PUMPS.

FOR HAND PUMPING.

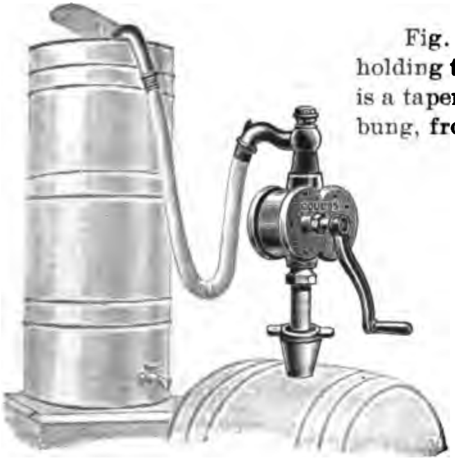


FIG. 464

Fig. 464 shows our Hand Rotary Pumps, arranged with an improvement for holding the suction pipe of the Pump rigid in the bung of a barrel. The holder is a tapering sleeve in two halves, and can be used in barrels having any size of bung, from 1½ to 4 inches in diameter. A suction pipe of three feet in length is furnished with each Pump as well as a hose coupling. With this apparatus, fluids of any character or consistency can be pumped from a barrel, tierce or hogshead, and forced into a reservoir or receptacle at a distance removed.

The prices given below include suction pipe, hose coupling, hook and holder.

Fig. 665 shows one of our celebrated Hand Rotary Force Pumps, arranged on a flat base or plate, 7 x 10 inches, with a cast-iron hub projecting four or five inches below it.

We always fit both suction and discharge for hose coupling unless otherwise ordered, but can fit them also for gas pipe if so advised. Constructive view and description of our celebrated Rotary Pump is given on page 152. For handling wine, liquor or any acid substances, Bronze Pumps should be used.

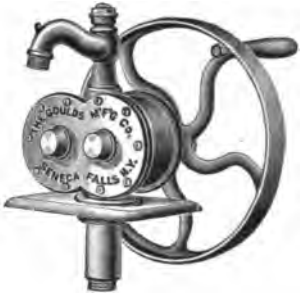


FIG. 665

FIG. 464. SIZES, PRICES, ETC.

No.	Capacity per Minute, 100 Revs.	Suction.	DISCHARGES.		IRON.		BRONZE CASE AND CAMS		† BRONZE.	
			End of Spout.	Top of Spout.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	10 gals.	1 in. pipe	1 in. hose	1 in. pipe	Girth	$17.00	Glade	$39.00	Prineet	$49.00
2	13 "	1 "	1 "	1 "	Gist	20.00	Glared	44.00	Prinfu	54.00
3	17 "	1¼ "	1¼ "	1¼ "	Give	24.00	Glass	49.00	Pringas	61.00

FIG. 665. SIZES, PRICES, ETC.

No.	Capacity per Minute, 100 Revs.	Suction.	DISCHARGES.		Dia. Balance Wheel.	IRON.		BRONZE CASE AND CAMS.		† BRONZE.	
			End of Spout.	Top of Spout.		Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	14½ in.	Louck	$19 50	Lung	$41.50	Pringet	$51.00
2	13 "	1¼ "	1 "	1 "	14½ "	Luff	22.50	Lured	46.50	Prubo	56.00
3	17 "	1½ "	1¼ "	1¼ "	14½ "	Luke	26.75	Lush	51.75	Prubum	64.00
4	27 "	1½ "	1½ "	1½ "	20 "	Lull	36.50	Lute	67.00	Prudal	89 00
5	36 "	2 "	2 "	2 "	20 "	Lump	42.00	Mace	77.50	Prudet	107.00

† "Bronze" Pumps have *all* parts coming in contact with the liquid of Bronze.

GOULDS SPECIAL ROTARY FORCE PUMP.

WITH BRACKET FOR ATTACHING TO MACHINES.

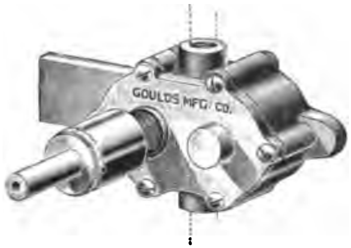


FIG. 944

Fig. 944 is a special pattern Rotary Force Pump, designed to pump small quantities of oil to pipe-cutting and threading machines, bolt cutters, etc., or return this oil to reservoir from which supply is taken to machines. They are simple in construction, the principal mechanism being a pair of gears, which run together in a tight case.

Pump has bracket for fastening to machines and shaft long enough to receive pulley.

While Pump will specially recommend itself to machine builders, manufacturers of bolts, screws, etc., yet it may be employed for any service where a small compact Force Pump is required.

FIG. 944. SIZE, PRICE, ETC.

No.	Capacity per Minute, 100 Revs.	Suction.	Discharge.	* Lift and Force.	Iron.		† Bronze.	
					Cipher.	Price.	Cipher.	Price.
0	1 gal.	½ in. pipe	½ in. pipe	100 ft.	Awning	$15.00	Calmed	$25.00

* Total lift and force from supply to point of delivery, Pump not more than 20 feet above liquid.
† Bronze Pump is made entirely of bronze.

GOULDS SPECIAL ROTARY FORCE PUMP.

ON FRAME WITH SINGLE PULLEY.

Fig. 1239 is designed especially to supply the increasing demand for a small and inexpensive Rotary Force Pump. It is simple in construction, the principal mechanism being a pair of gears, which run together in a tight case. It is provided with a substantial base with bearing for shaft cast thereon. Bearings are babbitted, suction is at side; single tight pulley provides power connection. It may be put to any ordinary uses where a small Force Pump can be employed.

Pump furnished with tight and loose pulley to order.

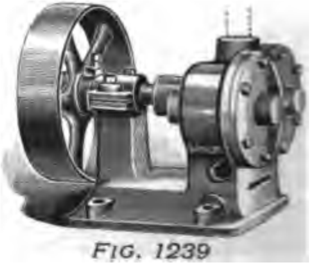


FIG. 1239

FIG. 1239. SIZE, PRICE, ETC.

No.	Capacity per Minute, 100 Revs.	Suction.	Discharge.	Pulley.	* Lift and Force.	Iron.		† Bronze.	
						Cipher.	Price.	Cipher.	Price.
2	5 gals.	1 in. pipe	1 in. pipe	10 x 2½	100 ft.	Reefji	$25.00	Reefjod	$55.00

* Total lift and force from supply to point of delivery, Pump not more than 20 feet above liquid.
† Bronze Pump has all parts coming in contact with the liquid bronze.

GOULDS POWER ROTARY FORCE PUMPS.

ON FRAME WITH TIGHT AND LOOSE PULLEYS.

Fig. 1185½ accurately represents our Rotary Force Pump on heavy cast-iron frame, with tight and loose pulleys for power. Its internal construction is described on page 152. Beyond the pulleys is a strong bearing with Babbitt-lined boxes in which the driving shaft runs. The shaft is also made long enough to take a balance wheel beyond the bearing, but this wheel is only furnished at extra price. This Pump will be found serviceable for furnishing considerable volume to elevations not exceeding 60 feet. They are largely used in creameries, breweries, wine cellars, oil refineries, etc. Fig. 1281, Power Rotary Force Pump, is the same as Fig. 1185½ described above but without spout piece, the top of case being tapped for iron pipe as per sizes given in table below. These are largely used for pumping to tanks.

By the addition of a metallic lower valve any of our Rotary Pumps will handle hot liquids. Hot liquids should always flow to the Pump, as rising vapors prevent any Pump from forming a vacuum, and thereby "sucking" the liquid. For handling acid substances Bronze Pumps should be used.

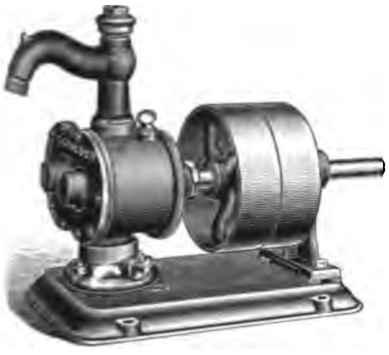


FIG. 1185½

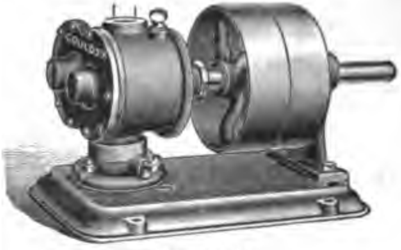


FIG. 1281

FIG. 1185½. SIZES, PRICES, ETC.

No.	Capacity per Minute, 100 Revs.	Suction.	Discharges. End of Spout.	Discharges. Top of Spout.	Pulleys, Each.	*Lift and Force.	Iron. Cipher.	Iron. Price.	Bronze Case and Cams. Cipher.	Bronze Case and Cams. Price.	†Bronze. Cipher.	†Bronze. Price.
1	10 gals.	1¼ in. pipe	1 in. hose	1 in. pipe	8 x 2½ in.	60 ft.	Tubeul	$27.00	Tubfat	$49.00	Pulpac	$60.00
2	13 "	1¼ "	1 "	1 "	8 x 2½ "	60 "	Tubevy	32.00	Tubfel	56.00	Pulpet	65.00
3	17 "	1½ "	1¼ "	1¼ "	8 x 2½ "	60 "	Tubewd	38.00	Tubfig	63.00	Pulpig	75.00
4	27 "	2 "	1½ "	1½ "	12 x 3½ "	60 "	Dotad	48.00	Douse	78.00	Pulpod	100.00
5	36 "	2 "	2 "	2 "	12 x 3½ "	60 "	Doteb	64.00	Dove	90.00	Pulpun	120.00
6	45 "	2½ "	2½ "	2½ "	24 x 4 "	60 "	Weigky	80.00	Wheezin	135.00	Pulpyx	175.00

FIG. 1281. SIZES, PRICES, ETC.

No.	Capacity per Minute, 100 Revs.	Suction.	Discharge.	Pulleys, Each.	*Lift and Force.	Iron. Cipher.	Iron. Price.	Bronze Case and Cams. Cipher.	Bronze Case and Cams. Price.	†Bronze. Cipher.	†Bronze. Price.
1	10 gals.	1¼ in. pipe	1¼ in. pipe	8 x 2¼ in.	60 ft.	Puntum	$26.00	Punsis	$48.00	Quire	$58.00
2	13 "	1¼ "	1¼ "	8 x 2½ "	60 "	Puntvo	31.00	Pusjit	55.00	Rabidmu	63.00
3	17 "	1½ "	1½ "	8 x 2½ "	60 "	Puntwi	37.00	Puskax	62.00	Rabidno	73.00
4	27 "	2 "	2 "	12 x 3½ "	60 "	Puntwut	46 00	Puskem	76.00	Rabidot	96.00
5	36 "	2 "	2 "	12 x 3½ "	60 "	Punsab	52.00	Puslit	88.00	Rabidug	116.00
6	45 "	2½ "	2½ "	24 x 4 "	60 "	Punsel	77.50	Quihot	132.50	Rabifa	170.00

*Total lift and force from supply to point of delivery, Pump not more than 20 feet above water.
†Bronze Pumps have *all* parts coming in contact with the liquid of bronze.

GOULDS SEMI-ROTARY "CLOCK" FORCE PUMP.

DOUBLE-ACTING, WITH REMOVABLE LEVER.

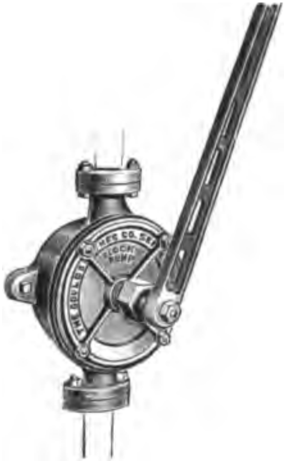


FIG. 965

Fig. 965 represents our Semi-Rotary "Clock" Force Pump, arranged with removable malleable lever.

Working parts of Pump comprise brass double wing, oscillating piston with brass valves on each side of wing, encased in cylinder The lever is attached to shaft or piston rod and the waterway of each set of valves is separated from the other in the suction-valve box. These Pumps are practically metallic fitted, and having no leather packing, may be employed in pumping hot liquids, oil, wine, etc.

In our brass-fitted Pumps all working parts are brass, except cylinder case and cover; in brass Pumps, all working parts are made of this metal.

FIG. 965. SIZES, PRICES, ETC.

No.	Approximate Capacity per Minute.	Suction.	Discharge.	* Lift and Force.	BRONZE-FITTED.		BRONZE.	
					Cipher.	Price.	Cipher.	Price.
1	4 gals.	½ in. pipe	½ in. pipe	150 ft.	Wordym	$8.00	Worldly	$16.00
2	5 "	¾ "	¾ "	150 "	Worec	9.50	Worm	20.00
3	6 "	1 "	1 "	125 "	Work	11.00	Wormal	27.50
4	9 "	1¼ "	1¼ "	125 "	Worker	13.00	Wormy	35.00
5	13 "	1¼ "	1¼ "	100 "	Workin	16.00	Worni	42.50
6	19 "	1½ "	1½ "	100 "	World	20.00	Wornie	50.00
8	26 "	2 "	2 "	90 "	Vahevb	27.50	Valency	70.00
9	36 "	2½ "	2½ "	80 "	Vahewx	40.00	Vareda	90.00

* Total lift and force from supply to point of delivery, Pump not more than 15 to 20 feet above water.

GOULDS SEMI-ROTARY "CLOCK" FORCE PUMP.

DOUBLE-ACTING. ON BASE.

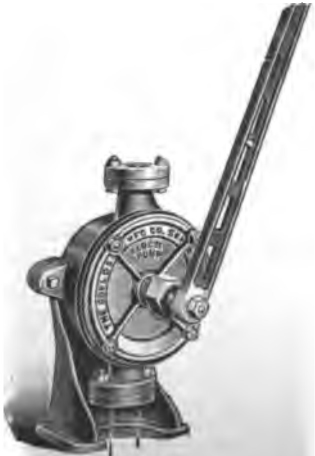


FIG. 982

Fig. 982 represents our celebrated Semi-Rotary "Clock" Pump, arranged on a base or standard. This base is detachable, and the Pump can either be used with the base, or can be bolted to a plank or the side of wall, as desired. These Pumps are practically metallic fitted, and may be employed for pumping hot liquids, oil, etc. Suction and discharge always fitted for wrought-iron pipe unless otherwise ordered. When fitted for lead pipe or hose an extra charge will be made.

FIG. 982. SIZES, PRICES, ETC.

No.	Capacity per Minute.	Suction.	Discharge.	* Lift and Force.	BRONZE FITTED.		BRONZE.	
					Cipher.	Price.	Cipher.	Price.
1	4 gals.	½ in. pipe	½ in. pipe	150 ft.	Wronga	$9.00	Zylop	$17.00
2	5 "	¾ "	¾ "	150 "	Wronger	10.50	Zylepel	21.00
3	6 "	1 "	1 "	125 "	Wrongfu	12.00	Zylops	28.50
4	9 "	1¼ "	1¼ "	125 "	Wrongly	14.00	Zylopqd	36.00
5	13 "	1¼ "	1¼ "	100 "	Wrongne	17.00	Zylora	44.00
6	19 "	1½ "	1½ "	100 "	Wrongou	21.00	Zylored	52.50
8	26 "	2 "	2 "	90 "	Vareef	30.00	Varegat	72.50
9	36 "	2½ "	2½ "	80 "	Vareful	42.50	Varehes	92.50

* Total lift and force from supply to point of delivery, Pump not more than 15 to 20 feet above water.

GOULDS SEMI-ROTARY "CLOCK" FORCE PUMPS.

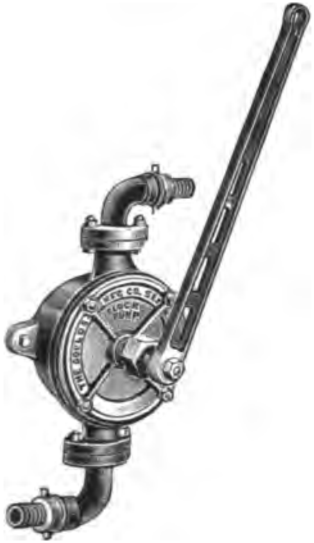


FIG. 1149.

DOUBLE-ACTING. ON BRACKETS OR BASE.

Fig. 1149 represents our Semi-Rotary "Clock" Force Pump, arranged with removable malleable lever, and elbows for hose connections.

In construction it is the same as Fig. 965, described on page 158.

Fig. 995 represents our "Clock" Pump, mounted on iron standard, with air chamber and cock spout. So arranged, these pumps may be used for drawing water at the spout, or for forcing the water above the Pump to tanks, bath-rooms, etc. Having metal valves, they may be employed for pumping hot liquids, oil, etc Suction and discharge always fitted for wrought-iron pipe unless otherwise ordered. When fitted for lead pipe or hose an extra charge will be made.

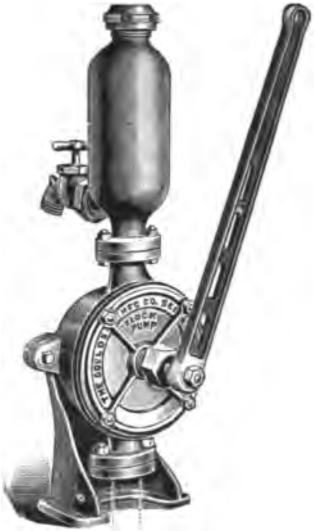


FIG. 995.

FIG. 1149. SIZES, PRICES, ETC.

No.	Approximate Capacity per Minute.	Suction.	Discharge.	*Lift and Force.	Bronze-Fitted.		Bronze.	
					Cipher.	Price.	Cipher.	Price.
1	4 gals.	½ in. pipe	½ in. pipe	150 ft.	Gulfab	$ 9.00	Hallap	$17.00
2	5 "	¾ "	¾ "	150 "	Gulface	10.75	Hallet	22.50
3	6 "	1 "	1 "	125 "	Gulfib	12.50	Hallik	29.00
4	9 "	1¼ "	1¼ "	125 "	Gulfog	15.00	Hallod	37.00
5	13 "	1¼ "	1¼ "	100 "	Gulfus	18.50	Hallus	45.00
6	19 "	1½ "	1½ "	100 "	Gelfyx	23.00	Halms	53.00

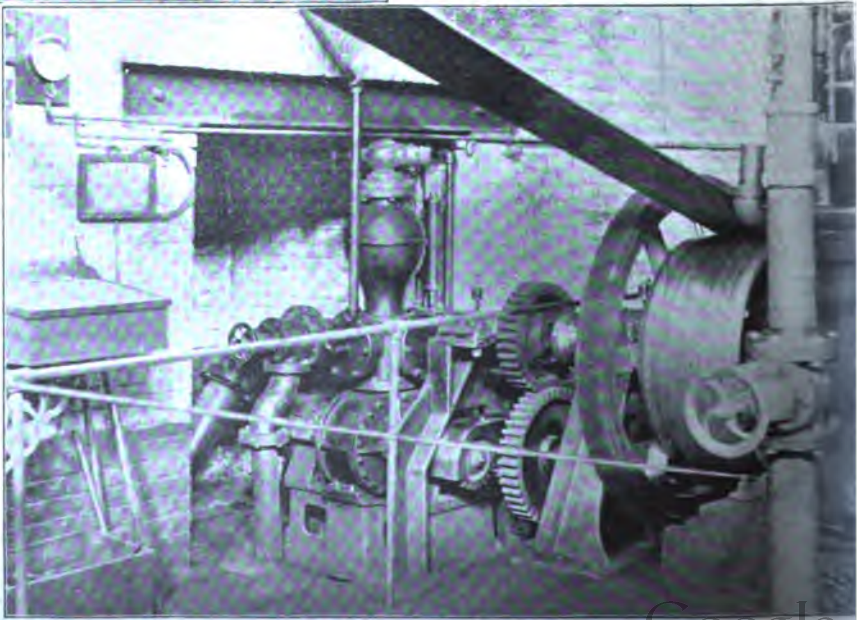
FIG. 995. SIZES, PRICES, ETC.

No.	Approximate Capacity per Minute.	Suction.	Discharge.	*Lift and Force.	Bronze-Fitted.		Bronze.	
					Cipher.	Price.	Cipher.	Price.
1	4 gals.	½ in. pipe	½ in. pipe	150 ft.	Zutela	$11.00	Zutelop	$19.00
2	5 "	¾ "	¾ "	150 "	Zuteled	12.50	Zutelny	23.00
3	6 "	1 "	1 "	125 "	Zylonp	14.00	Zyma	30.50
4	9 "	1¼ "	1¼ "	125 "	Zylonti	16.00	Zym	38.00
5	13 "	1¼ "	1¼ "	100 "	Zyloo	19.00	Zymad	46.00
6	19 "	1½ "	1½ "	100 "	Zyloosd	24.00	Zymeg	56.00
8	26 "	2 "	2 "	90 "	Vareef	35.00	Varegat	77.50
9	36 "	2½ "	2½ "	80 "	Vareful	47.50	Varehes	97.50

*Total lift and force from supply to point of delivery, Pump not more than 15 to 20 feet above water.

GOULDS
POWER ROTARY
FIRE PUMPS.

These Pumps are unexcelled for fire protection for factories, ware-houses, etc. They occupy little space, are moderate in cost and will afford effective fire protection. The method of driving, connections, etc., are details covered by local conditions and requirements. We refer to pages 162 to 167.



GOULDS POWER ROTARY PUMP.

A Pump of this type has remarkably great capacity, considering its dimensions, and its capacity increases or decreases in proportion to increase or decrease of speed. It handles liquids of any kind, hot or cold, thick or thin. For fire protection, pumping for manufacturing and other purposes, our Rotary Pump possesses a long established reputation for durability, good workmanship and general excellence.

When the Pump is used intermittently, it should be freed of water when stopped and some oil introduced at the priming plug. Turning the Pump a few times will effectively spread the oil over the cams and the case and thus corrosion will be prevented.

Following table of Effective Fire Streams is condensed from paper by John R. Freeman, C. E., read before the New England Water Works Association:

TABLE OF EFFECTIVE FIRE STREAMS.

USING 100 FEET OF 2½-INCH ORDINARY BEST QUALITY RUBBER-LINED HOSE BETWEEN NOZZLE AND HYDRANT, OR PUMP.

Smooth Nozzle, Size	¾-Inch.						⅞-Inch.						1-Inch.					
Pressure at Hydrant, lbs	32	43	54	65	75	86	34	46	57	69	80	91	37	50	62	75	87	100
Pressure at Nozzle, lbs	30	40	50	60	70	80	30	40	50	60	70	80	30	40	50	60	70	80
Pressure lost in 100 ft., 2½-in. hose, lbs	2	3	4	5	5	6	4	6	7	9	10	11	7	10	12	15	17	20
*Vertical Height, feet Effective Stream	48	60	67	72	76	79	49	62	71	77	81	85	51	64	73	79	85	89
*Horizontal Distance, feet, Effective Stream	37	44	50	54	58	62	42	49	55	61	66	70	47	55	61	67	72	76
Gals. Discharged per minute	90	104	116	127	137	147	123	142	159	174	188	201	161	186	208	228	246	263

Smooth Nozzle, Size	1⅛-Inch.						1¼-Inch.						1⅜-Inch.					
[illegible] at Hydrant, lbs	42	56	70	84	98	112	49	65	81	97	113	129	58	77	96	116	135	154
[illegible] at Nozzle, lbs	30	40	50	60	70	80	30	40	50	60	70	80	30	40	50	60	70	80
[illegible] lost in 100 ft., 2½-in. hose [illegible]	12	16	20	24	28	32	9	25	31	37	43	49	28	37	46	56	65	74
[illegible] Height of Effective Stream, [illegible]	52	65	75	83	88	92	53	67	77	85	91	95	55	69	79	87	92	97
[illegible] Dis. of Effective Stream, [illegible]	50	59	66	72	77	81	54	63	70	76	81	85	56	66	73	79	84	88
[illegible] Discharged per minute	206	238	266	291	314	336	256	296	331	363	392	419	315	363	406	445	480	514

Two hundred and fifty gallons per minute is a good standard fire stream with 80 pounds pressure at the [illegible].

*Spray or drops will go from 22 per cent. to 56 per cent. higher, and from 120 per cent. to 150 per cent. farther horizontally, but figures given in table are for "*Effective*" fire streams that will make a black mark where they hit.

GOULDS POWER ROTARY FORCE PUMP.

WITH TIGHT AND LOOSE PULLEYS FOR BELT.

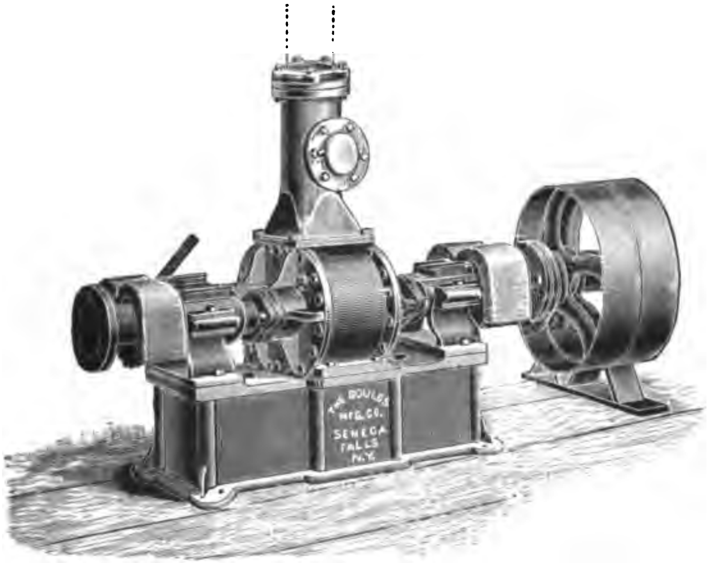

THE GOULDS MFG. CO. SENECA FALLS N.Y.

FIG. 301. NO. 5

Fig. 301, Power Rotary Force Pump, is designed for water supply, tank service, circulating liquids of any kind, pumping, oil, etc. It has tight and loose pulleys. Sizes No. 1, 2 and 3 have shaft extended to carry the pulleys, which will be placed at either end of the Pump, as ordered. Nos. 4, 5 and 6 have pulleys mounted on short piece of shaft and connected to cam shaft by flange coupling, which may be attached at either end of Pump. All sizes have out-board bearing for pulleys. Pulleys are regularly attached, as shown in illustration. Cut and description on page 152 show the construction of these celebrated Rotary Pumps. Outside of case are two heavy sets of cut gears connecting the cam shafts. Nos. 1, 2 and 3 have two discharge openings fitted with interchangeable flanges, one tapped for pipe of size given in table, the other fitted for hose coupling and furnished with cap. (Size hose given in table.) Nos. 4, 5 and 6 have three discharge openings, two being fitted as above and the third with blank flange. We list Nos. 3, 4, 5 and 6 with air chamber under Fig. 896, page 164.

FIG. 301. SIZES, PRICES, ETC.

No.	Capacity One Rev.	† Speed and Capacity per Minute, varying with Kind of Work and Pressure.		Suction.	Discharges.	Pulleys, Each.	Iron.		Bronze Case and Cams.		* Bronze.	
							Cipher.	Price.	Cipher.	Price	Cipher	Price.
1	¼ gal.	100 to 250 revs.,	25 to 60 gals.	2 in. pipe	1½ in. pipe and 1½ in. hose	12 x 3½ in.	Dowdy	$115.00	Dozad	$155.00	Rabkul	$185.00
2	½ "	100 to 200 "	50 to 100 "	2½ "	2 " " 2 "	16 x 4 "	Down	130.00	Dozer	195.00	Rablee	245.00
3	1 "	100 to 175 "	100 to 175 "	3 "	2½ " " 2½ "	18 x 5 "	Dowry	185.00	Dozy	305.00	Rablig	405.00
4	1⅔ "	100 to 150 "	165 to 250 "	5 "	4 " " 2½ "	24 x 6 "	Wealth	275.00	Weanac	475.00	Raptem	650.00
5	2½ "	75 to 125 "	185 to 310 "	6 "	5 " " 2½ "	30 x 8 "	Wean	350.00	Weanel	600.00	Raptere	[illegible]
6	4½ "	60 to 100 "	270 to 450 "	8 "	6 " " 2½ "	36 x 10 "	Bandage	550.00	Basal	950.00	Raptub	1450.00

† Speeds given are a fair rate for continuous running; can be doubled for occasional service. Pumps are strong enough to force against about 100 pounds pressure.

* "Bronze" Pumps have *all* parts coming in contact with the liquid of bronze.

GOULDS POWER ROTARY FORCE PUMP.

ON FRAME, WITH COUPLINGS ON EACH END OF DRIVING SHAFT.

This cut represents another of our Power Rotary Force Pumps as we build them in the larger sizes, mounted on frame, with two heavy sets cut gears and coupling on each end of driving shaft for power connection.

On page 152 is given constructive view of these celebrated Rotary Pumps, together with description. Nos. 1, 2 and 3 have two discharge openings, fitted with interchangeable flanges; one tapped for pipe of size given in table, the other fitted for hose coupling and furnished with cap (size hose given in table).

Nos. 4, 5 and 6 have three discharge openings; two being fitted as above and the third with blank flange.

We list Nos. 3, 4, 5 and 6 with air chamber under Fig. 302½ on page 165.

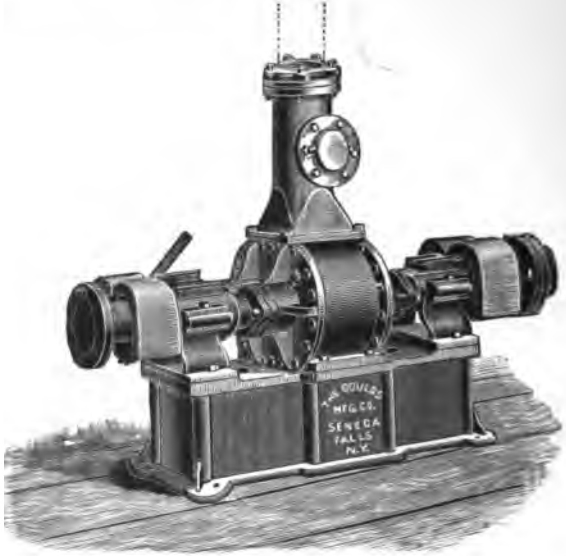

THE GOULDS MFG. CO. SENECA FALLS N.Y.

FIG. 302

FIG. 302. SIZES, PRICES, ETC.

No.	Capacity one Revolution.	†Speed and Capacity per Minute.	Suction.	Discharges.	Iron.		Bronze Case and Cams.		*Bronze.	
					Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
1	¼ gal.	100 to 250 revs., 25 to 60 gals.	2 in. pipe	1½ in. pipe and 1½ in. hose	Draft	$100.00	Weaning	$140.00	Raptulo	$170.00
2	½ "	100 to 200 " 50 to 100 "	2½ "	2 " " 2 "	Drag	115.00	Weapon	180.00	Raptums	230.00
3	1 "	100 to 175 " 100 to 175 "	3 "	2½ " " 2½ "	Drain	170.00	Wear	290.00	Raptunt	390.00
4	1⅝ "	100 to 150 " 165 to 250 "	5 "	4 " " 2½ "	Drake	250.00	Wearda	450.00	Raptva	625.00
5	2½ "	75 to 125 " 185 to 310 "	6 "	5 " " 2½ "	Dram	325.00	Wearer	575.00	Raptvex	875.00
6	4½ "	60 to 100 " 270 to 450 "	8 "	6 " " 2½ "	Dripom	525.00	Wearfu	925.00	Raptvil	1425.00

†Speeds given are a fair rate for continuous running; can be doubled for occasional service. Pumps are strong enough to force against about 100 pounds pressure.

*"Bronze" Pumps have *all* parts coming in contact with the liquid of bronze.

GOULDS POWER ROTARY FIRE PUMP.

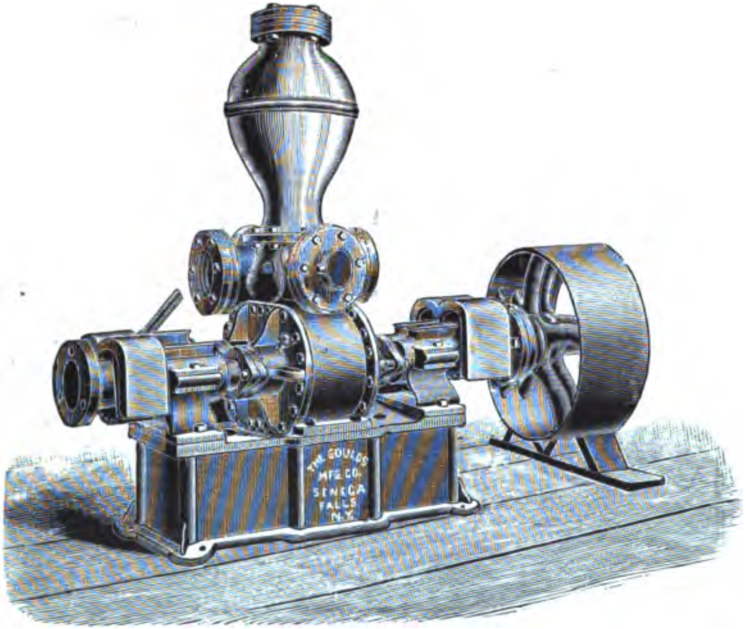


FIG. 896

Fig. 896 represents our Power Rotary Fire Pump, surmounted with air chamber, with outside bearings and one wide pulley for belt power. This manner of transmitting power may be preferable, or more available, in some places, and if necessary or desirable to secure protected position, driving shaft may be extended any distance, and outside bearing with pulley located at end. Flanged Coupling is interchangeable at either end, thus readily adapting Pumps for any place or position.

The suction is regularly fitted for wrought-iron pipe. It will be fitted for cast-iron pipe or hose when so ordered. There are five discharge openings on all Pumps. One has Flange cut for 2½-inch hose coupling and furnished with cap. Another has Flange threaded for wrought-iron pipe of size stated in table below; the other outlets are provided with blank flanges. All five flanges are interchangeable. These outlets will be fitted otherwise to order. See page 152 for construction view and description.

See our remarks under Fig. 302½ (page 165) concerning water relief valve to be used with this pump.

See "Table of Effective Fire Stream," page 161.

FIG. 896. SIZES, PRICES, ETC.

Size.	Capacity, one Revolution.	Speed and Capacity per Minute, for Good Fire Service.	Suction.	Discharges.	Single Pulley.	IRON.		BRONZE CASE AND CAMS.	
						Cipher.	Price.	Cipher.	Price.
No. 3	1 gal.	350 to 400 revs.. 350 to 400 gals.	3 in. pipe	2½ in. hose and 2½ in. pipe	22 x 12 in.	Weald	$200.00	Raptvoe	$320.00
" 4	1⅜ "	300 to 350 " 500 to 580 "	5 "	2½ " " 4 "	24 x 14 "	Wealden	290.00	Raptvud	490.00
" 5	2½ "	250 to 300 " 625 to 750 "	6 "	2½ " " 5 "	30 x 15 "	Wealdis	375.00	Raptvyw	625.00
" 6	4½ "	200 to 250 " 900 to 1125 "	8 "	2½ " " 6 "	36 x 16 "	Wealar	600.00	Raptwax	1000.00

See pages 299 to 307 for Prices, Pipe, Hose, Couplings, Play Pipes, etc.

GOULDS POWER ROTARY FIRE PUMP.

WITH COUPLING FOR DRIVING SHAFT.

Fig. 302½ is a powerful Fire Pump, durable and simple, having only two moving parts in the case (or cylinder.) The method of driving shown in Fig. 895, page 166, is excellent.

On page 152 is constructive view and description of these celebrated Rotary Pumps. The suction is regularly fitted for wrought-iron pipe. It will be fitted for cast-iron pipe or hose when so ordered. There are five discharge openings on all Pumps. One has flange cut for 2½-inch hose coupling and furnished with cap. Another has flange tapped for iron pipe of size stated in table below; the other outlets are provided with blank flanges. All five flanges are interchangeable. These outlets will be fitted otherwise to order.

An automatic relief valve should be attached close to the Pump. Either the spring or lever style may be used. General preference is for the spring valve. We are prepared to furnish both at market rates.

Valves for the several sizes should be: For No. 3 Pump, 2½-inch; No. 4 Pump, 3-inch; No. 5 Pump, 3½-inch; No. 6 Pump, 4-inch.

See "Table of Effective Fire Streams," page 161.

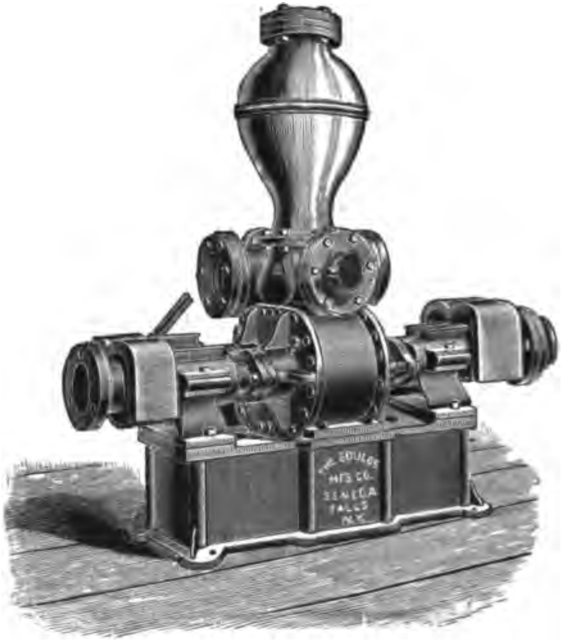


FIG. 302½

FIG. 302½. SIZES, PRICES, ETC

No.	Capacity One Rev.	Speed and Capacity per Minute for Good Fire Service.	Suction.	Discharges.	Iron.		Bronze Case and Cams.	
					Cipher.	Price.	Cipher.	Price.
3	1 gal.	350 to 400 revs., 350 to 400 gals.	3 in. pipe	2½ in. hose and 2½ in. pipe	Dregs	$175.00	Rabims	$295.00
4	1⅜ "	300 to 350 " 500 to 580 "	5 "	2½ " " 4 "	Dress	260.00	Rabjoe	460.00
5	2½ "	250 to 300 " 625 to 750 "	6 "	2½ " " 5 "	Drift	335.00	Rabjud	585.00
6	4½ "	200 to 250 " 900 to 1125 "	8 "	2½ " " 6 "	Bearish	535.00	Rabkoo	935.00

See pages 299 to 307 for Prices, Pipe, Hose, Couplings, Play Pipes, etc.

GOULDS POWER ROTARY FIRE PUMP.

WITH FRICTIONAL GEARING.

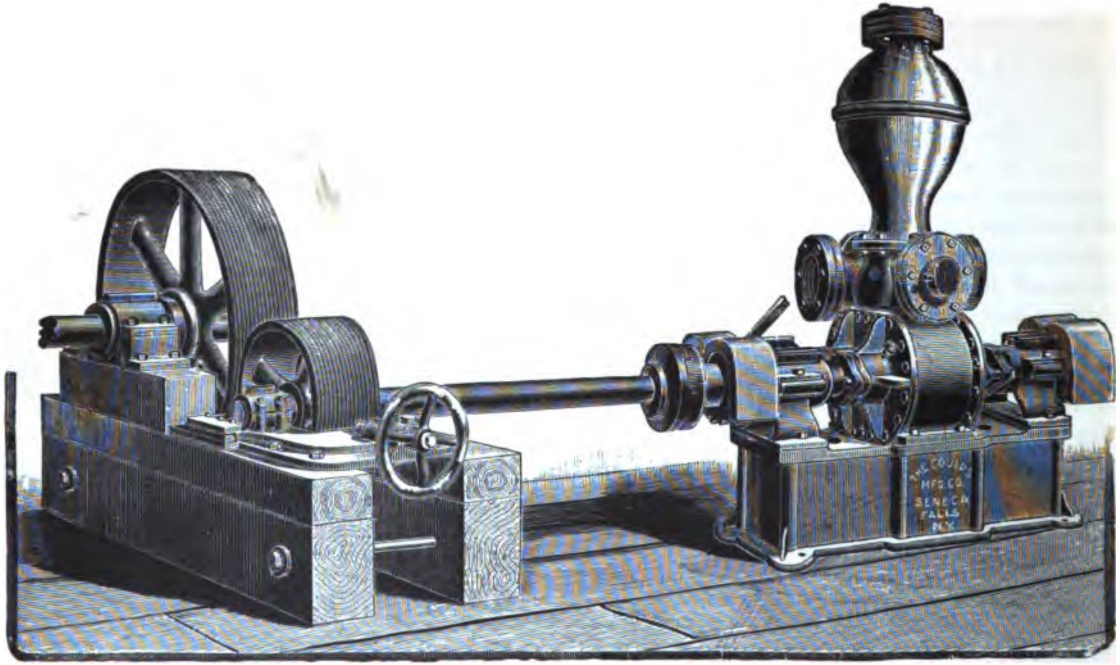


FIG. 895

Fig. 895, Power Rotary Fire Pump, is arranged with frictional gearing. It is a method of driving acceptable to the Fire Underwriters, and is generally specified by them. Friction gears are a special form of pulley with faces cut to V-shaped grooves accurately fitted to mesh together. They have great traction or transmitting power, and with but relatively little thrust on the bearings.

Rotary Fire Pumps are more commonly found in mills having water power, yet the Rotary Pump is often placed in mills and factories having steam power only. We have in our own works a 1,000-gallon Rotary Fire Pump coupled to a steam engine. This equipment is satisfactory to and has been accepted by the Associated Factory Mutual Insurance Companies.

Prices upon complete outfit with any method of driving will be quoted upon application. The following data is necessary: Quantity of water required per minute; elevation above the Pump to highest point to be covered by fire stream; distance from Pump to remotest points to be protected; diameter and speed of the shaft available for driving the Pump; a sketch showing where the Pump is to be placed, the driving shaft and immediate surroundings.

We refer to previous pages for further description and to page 161 for information about Fire Streams, etc.

GOULDS ROTARY ELECTRIC PUMP.

WITH BASE AND INTERMEDIATE GEARING.

Fig. 303 is our Rotary Pump arranged with base and gearing to be driven by an electric motor.

This combination forms a pumping equipment which is light, compact, portable and of great capacity. It is serviceable for mining, irrigation, fire protection and in manufacturing plants for a wide variety of pumping.

Price will include the Pump, the motor base and the gearing necessary to connect the Pump and motor, but does not include the motor.

We will furnish electric motors of any make and type, completing the equipment, sending it out ready for pipe and wire connections, if so ordered.

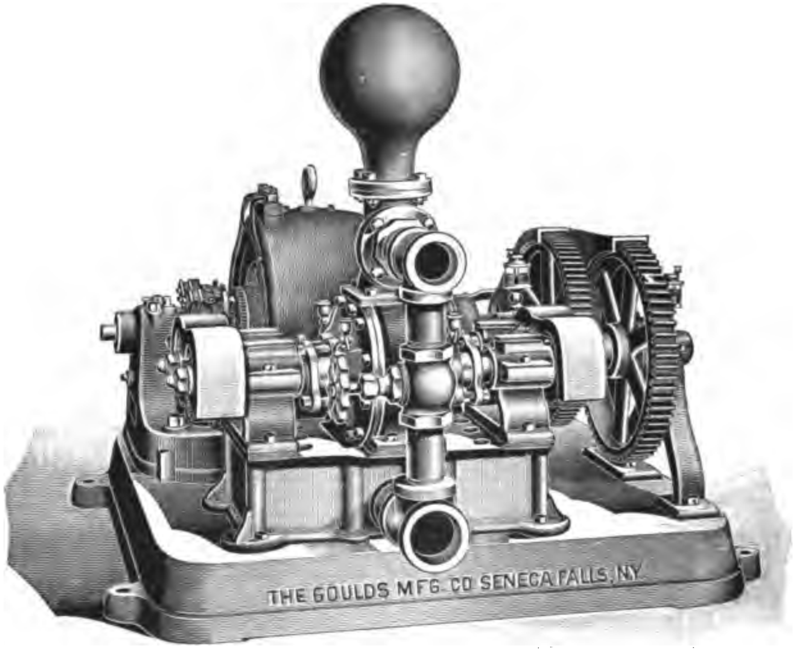


FIG. 303, NO. 3

FIG. 303. SIZES, CAPACITIES, ETC.

Size.	Capacity one Revolution.	Usual Speed and Capacity per Minute.	Suction.	Discharge.	Geared.	Iron.		Bronze Case and Cams.	
						Cipher.	Price.	Cipher.	Price.
No. 1	.25 gal.	250 revs.— 62 gals.	2 in.	1½ in.	As Required by the Electric Motor.	Zymo	$235.00	Zymn	$275.00
" 2	.50 "	200 " 100 "	2½ "	2 "		Zymols	275.00	Zymrd	340.00
" 3	1. "	175 " 175 "	3 "	2½ "		Zymose	345.00	Zymso	465.00
" 4	1.6 "	150 " 240 "	5 "	4 "		Zymot	500.00	Zylo	700.00
" 5	2.5 "	125 " 312 "	"	5 "		Zymome	625.00	Zylobs	875.00
" 6	4. "	100 " 400 "	8 "	6 "		Zymfur	975.00	Zylocl	1375.00

Prices upon application.

GOULDS CENTRIFUGAL PUMPS.

Centrifugal Pumps have been built for years, but they have mostly been of a very crude and inefficient type. The Pumps we build have been gradually improved until now they are in point of capacity, efficiency and workmanship the best on the market. This class of Pumps is intended for elevating large quantities of water under comparatively low heads, and they will show a greater economy than any other type of Pump. They are extremely simple. The only moving parts being the runner and shaft, there is practically nothing to wear out, and they will last, therefore, for years without any expenditure whatever in repairs.

Many builders of Centrifugal Pumps state a capacity for each Pump which can only be obtained with an enormous expenditure of power and very high speed. In the following tables we only give the economical capacity of our Pumps; that is, the capacity at which they will take the least amount of power. By running them at a higher speed a greater capacity can be obtained, but, at the same time, the efficiency is reduced so that the power required to operate them will be greater than if a larger size Pump were used. The table of revolutions per minute given below is accurate, and if the Pumps are run according to the speeds there given, the discharge will be that given in the tables.

Centrifugal Pumps are used very extensively for irrigation and drainage, sewage pumping, dry docks, paper and pulp mills, tanneries, dyers, distillers, starch factories, excavations, etc., and they are especially to be recommended as no solid matter in suspension will prevent their operation, because, as they have no valves whatever, there is nothing to clog up or become foul.

Pump No. Diameter Discharge Opening.	Economical Capacity per Minute.	Horse-Power Required for Each Foot Elevation.	Revolutions Per Minute at Which Pumps Should be Run to Deliver "Economical Capacity" to Different Elevations.									Pump No. Diameter Discharge Opening.
Inches.			5 feet.	10 feet.	15 feet.	20 feet.	25 feet.	30 feet.	35 feet.	40 feet.	50 feet.	Inches.
1½	70 gals.	.035	428	604	739	854	955	1,045	1,131	1,208	1,351	1½
1¾	90 "	.046	348	491	601	695	777	850	920	982	1,099	1¾
2	120 "	.06	302	426	522	603	674	737	798	852	953	2
2½	185 "	.09	302	426	522	603	674	737	798	852	953	2½
3	260 "	.13	302	426	522	603	674	737	798	852	953	3
4	470 "	.22	285	402	493	569	637	697	754	805	901	4
5	735 "	.37	256	362	443	512	572	626	678	724	810	5
6	1,050 "	.53	214	302	368	427	478	523	566	604	675	6
8	2,000 "	1.01	183	259	317	366	409	448	485	517	579	8
10	3,000 "	1.52	168	238	291	336	376	411	445	475	532	10
12	4,200 "	2.12	133	188	230	266	298	326	352	376	421	12
15	7,000 "	3.53	105	148	181	209	234	256	277	295	331	15
*15	7,000 "	3.53	151	213	261	301	337	369	399	426	477	15*
18	10,000 "	5.00	105	148	181	209	234	256	277	295	331	18
*18	10,000 "	5.00	151	213	261	301	337	369	399	426	477	18*
20	12,000 "	6.00	144	202	245	285	321	348	376	400	448	20

* Refers to low-lift Pumps.

Above table gives *correct* speed of our Pumps as employed under usual conditions of pumping. If water must be forced through a number of bends and elbows, or a great length of piping the above speed must be somewhat increased.

Use large pipes and easy bends wherever practicable, as they save power. We can furnish elbows and piping of any size.

GOULDS VERTICAL CENTRIFUGAL PUMPS.

SUBMERGED AND SUCTION TYPES.

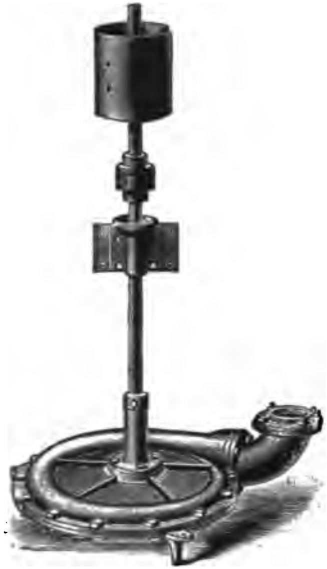


FIG. 694
SUBMERGED TYPE.

Fig. 694 shows our Vertical Pump which is intended to be submerged in the liquid to be pumped. This is probably the simplest type of pump in the market and is easily placed in position. Being entirely covered by water it requires no apparatus for priming. It is always ready to start as soon as power is applied. This Pump is used considerably by contractors in excavations and coffer-dam work, and also in some instances for pumping out dry docks. We are prepared to furnish extra shafting, bearings and pipe. In ordering shafting give distance from foundation on which the pump sets to center of pulley.

Fig. 693 shows our Vertical Suction Pump. This Pump is to be placed above the water from which it is drawing. This Pump is mainly used for pumping from driven wells or in any place where it is not desirable to submerge the pump, but where the situation nevertheless will not allow the use of a horizontal pump.

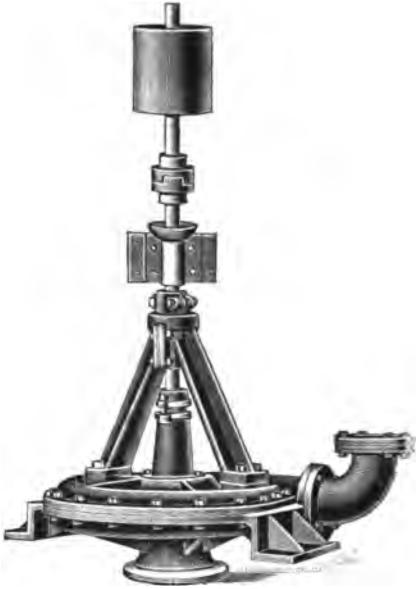


FIG. 693
SUCTION TYPE.

FIGS. 694 AND 693. SIZES, PRICES, ETC.

Pump No. Diameter Discharge Opening. Inches.	Economical Capacity per Minute.	Diameter and Face of Pulley in Inches.	Floor Space Required in Inches.	Distance from Bottom of Pump to Center of Coupling.	Coupling Bored for Connecting Shaft, Diameter.	Fig. 694. Submerged Type, With Elbow, One Pair Couplings, Pulley and One Bearing.				Fig. 693. Suc. Type, With Elbow, One Pair Coup's, Pul. and One Bearing.		Pump No. Diameter of Discharge Opening. Inches.
						Iron.		Brass.		Iron.		
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	
1⅓	70 gals.	5 x 6	17 x 21	2 ft. 9 in.	1 in.	Zymek	$40.00	Bill	$70.00	Reefky	$44.00	1⅓
1¾	90 "	6 x 6	21 x 29	3 " 0 "	1 "	Pant	50.00	Peak	90.00	Reeflu	55.00	1¾
2	120 "	7 x 8	23 x 30	3 " 4 "	1 1/16 "	Pare	65.00	Peal	110.00	Reefmor	72.00	2
2½	185 "	7 x 8	24 x 30	3 " 4 "	1 1/16 "	Wander	80.00	Wang	135.00	Reefnir	88.00	2½
3	260 "	7 x 8	25 x 32	3 " 6 "	1⅛ "	Park	95.00	Peat	150.00	Reefnud	105.00	3
4	470 "	8 x 10	29 x 39	4 " 0 "	1 7/16 "	Part	110.00	Peck	240.00	Reefoj	122.00	4
5	735 "	10 x 10	34 x 45	4 " 7 "	1 11/16 "	Zymel	140.00	Bind	315.00	Reefju	155.00	5
6	1,050 "	12 x 12	37 x 48	4 " 7 "	1 13/16 "	Pass	170.00	Peek	360.00	Reefqut	190.00	6
8	2,000 "	18 x 12	45 x 56	5 " 5 "	2 "	Past	265.00	....	....	Reegas	295.00	8
10	3,000 "	20 x 12	51 x 68	5 " 5 "	2 "	Pate	330.00	....	....	Reeget	365.00	10
12	4.200 "	24 x 14	63 x 72	6 " 0 "	2⅜ "	Path	420.00	....	....	Reeglm	475.00	12
15	7,000 "	30 x 16	77 x 102	6 " 6 "	3¼ "	Pave	600.00	....	....	Reegog	665.00	15
15*	7,000 "	30 x 15	60 x 71	6 " 6 "	3¼ "	Regeab	480.00	....	....	Reegum	530.00	*15
18	10,000 "	36 x 18	98 x 126	7 " 0 "	3¾ "	Pawn	950.00	....	....	Reegvo	1050.00	18
18*	10,000 "	30 x 16	66 x 78	6 " 6 "	3¼ "	Regeel	850.00	....	....	Reegvus	940.00	*18
20	12,000 "	36 x 20	73 x 92	4 " 6 "	4 "	Regeff	1200.00	....	....	Reegwe	1325.00	20

* Refers to Low Lift Pumps.
For table of revolutions and power required to lift water to different heights, see table page 168.

GOULDS HORIZONTAL CENTRIFUGAL PUMPS.

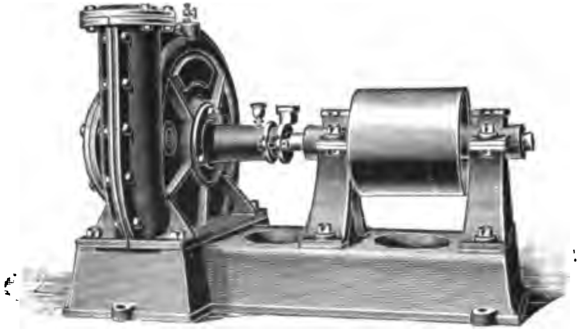


FIG 695 WITHOUT PRIMER.

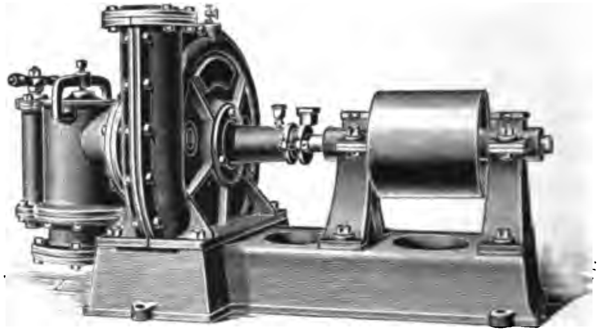


FIG. 696, WITH PRIMER.

Fig. 695 shows our improved Horizontal Pump without suction primer. This pump as a machine is perfect. It is strong and solid. It has a large diameter shaft running in long bearings lined with best babbitt metal. The pulley is large, the hub bearing is of special design fitted with proper packing gland. Oil boxes are large and have covers to keep out dust and dirt. All parts are accurately machine fitted.

Fig. 696 shows our Standard Horizontal Pump with suction primer attached. The small force pump on the extreme left is only used for charging the main pump. Before starting, this small force pump is worked by hand until the main pump is filled so that the water spurts from the pet-cock on top of the pump shell. This shows that the pump is completely filled and therefore is ready to start. The primer will keep the pump primed and makes foot valves unnecessary.

FIGS. 695 AND 696. SIZES, CAPACITIES, PRICES, ETC.

No. Pump. Diameter of Discharge. Inches.	Size Pipe Flange on Suction.	Economical Capacity per Minute.	Diameter and Face of Pulley in Inches.	Floor Space Required in Inches. Without Primer.	FIG. 695. WITHOUT PRIMER.				FIG. 696. WITH PRIMER.			
					Iron.		Brass Fitted.	Brass.	Iron		Brass Fitted.	Brass
					Cipher.	Price.	Price.	Price.	Cipher.	Price.	Price.	Price.
1½	2 in.	70 gals.	6 x 6	17 x 31	Bung	$45.00	$57.00	$85.00	Cabined	$55.00	$67.00	$105.00
1¾	2 “	90 “	7 x 8	21 x 32	Mane	60.00	75.00	100.00	Oval	70.00	85.00	120.00
2	3 “	120 “	8 x 8	23 x 37	Many	75.00	93.00	125.00	Oven	90.00	108.00	150.00
2½	3 “	185 “	8 x 8	24 x 38	Wanting	90.00	112.00	150.00	Wapiti	105.00	127.00	175.00
3	4 “	260 “	8 x 8	25 x 39	Mar	110.00	135.00	175.00	Over	130.00	155.00	210.00
4	5 “	470 “	10 x 10	29 x 41	Mare	130.00	170.00	275.00	Oxen	155.00	195.00	330.00
5	6 “	735 “	12 x 12	34 x 54	Broadcast	165.00	225.00	350.00	Bugler	195.00	255.00	420.00
6	8 “	1,050 “	15 x 12	37 x 55	Mark	200.00	290.00	410.00	Oyer	240.00	330.00	495.00
8	10 “	2,000 “	20 x 12	45 x 64	Marl	310.00	440.00	....	Pace	375.00	505.00	....
10	12 “	3,000 “	24 x 12	51 x 69	Mars	395.00	560.00	....	Pack	470.00	635.00	....
12	15 “	4,200 “	30 x 14	63 x 71	Mart	500.00	775.00	....	....	....	....	....
15	18 “	7,000 “	40 x 15	77 x 80	Mash	850.00	....	....	....	....	....	....
15*	18 “	7,000 “	30 x 16	60 x 68	Regegs	710.00	....	....	....	....	....	....
18	20 “	10,000 “	40 x 15	93 x 103	Regeho	1,300.00	....	....	....	....	....	....
18*	20 “	10,000 “	30 x 16	66 x 72	Regfat	1,150.00	....	....	....	....	....	....
20	22 “	12,000 “	36 x 20	73 x 83	Regfen	1,540.00	....	....	....	....	....	....

*Refers to Low Lift Pumps.

Cipher is given for iron pump only. When Brass-Fitted Pump is wanted add to cipher the word “**Brass-Fitted.**” When Brass is wanted add the word “Brass.”

For table of revolutions and power required to elevate water to different heights, see table page 168. For priming pumps larger than 10-inch we recommend flap valve or foot valve with Steam Ejector. See page 173.

Fig. 1257, Special Double-Action Centrifugal Pump (right and left hand combined), is made especially to meet the wants of a high grade pump in paper mills, where service in handling not only water but pulp is especially severe. The cut gives a good idea of the extreme strength and heavy proportions of this pump. One of its special features is that the same pump can readily be made into either right or left hand by simply swiveling the discharge piece around. The bearings are of a special type and are removable without disturbing shaft, pulley, belt, or in fact any part of the pump. The pump is designed to give the very best efficiency and is capable of continuous operation even if the discharge pipe is closed, keeping the water under pressure until required.

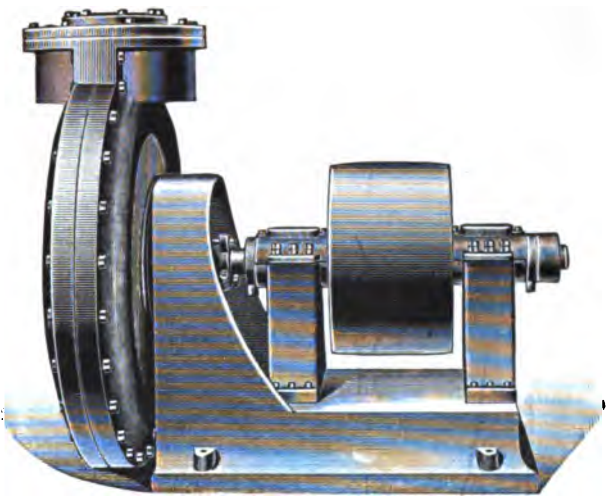


FIG. 1257, DOUBLE-ACTION.

RIGHT AND LEFT HAND COMBINED PUMP.

FIG. 1257. SIZES, CAPACITIES, PRICES, ETC.

Pump No. Diameter Discharge Opening. Inches.	Capacity per Minute.	Speed Necessary to Deliver This Capacity to Different Elevations. Revolutions per Minute.													Dia. and Face Pulley in Inches.	Floor Space Required in Inches.	Iron.	
		10 ft.	15 ft.	20 ft.	25 ft.	30 ft.	35 ft.	40 ft.	50 ft.	60 ft.	70 ft.	80 ft.	90 ft.	100 ft.			Cipher.	Price.
4	500 gals.	284	348	402	450	492	532	568	622	681	736	786	834	880	16 x 10	45½ x 33½	Remab	$150.00
6	1,000 "	241	295	341	382	417	452	482	527	577	623	666	706	747	20 x 12	55½ x 41¾	Remace	250.00
8	1,800 "	198	244	281	314	344	372	397	434	476	514	550	583	615	24 x 15	68 x 51½	Remadl	400.00

Note: Pump, when run at speeds given in above table and with pipes two sizes larger than opening in pump, will require the least power. By increasing the speed a greater discharge can be obtained, for a given lift, but with a loss of power. Due consideration must be taken of the length of pipe and number of elbows forced through.

GOULDS SAND AND DREDGING PUMP.

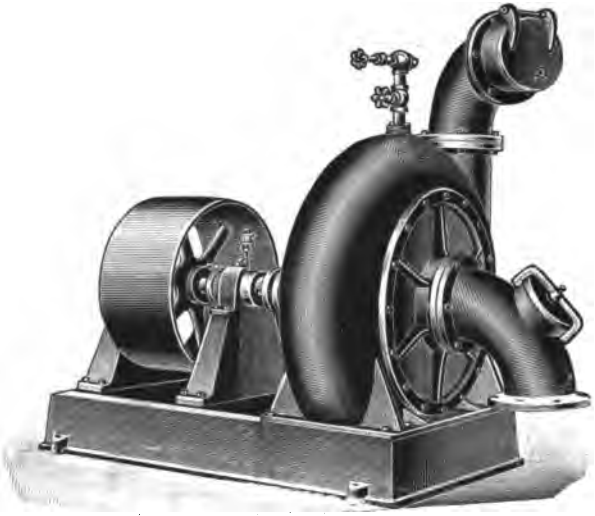


FIG. 1181
SAND AND DREDGING PUMP.

Fig. 1181 shows our Sand and Dredging Pump. The Pump shell is made in one casting and is very heavy, especially in the part that receives the greatest wear. A removable disk is fitted to the suction side of Pump, which can be readily removed, and as this opening is larger than the piston, this can be withdrawn without disturbing the Pump shell or any other part. The pistons have removable liners. It is heavily ribbed inside and has a large surface on the bottom. The bearing pedestals are very strong and heavy, so as to prevent any vibration.

We can furnish any of our Dredging Pumps with engines, single or compound, directly connected, and will, upon application, make special estimates for same.

FIG. 1181. SIZES, CAPACITIES, PRICES, ETC.

Pump No. Diameter Discharge Opening. Inches.	Diameter Suction.	Cubic Yards Material per Hour. Per Cent. of Solids.			Horse Power Required for Each 10 Feet Elevation.	Floor Space Required. Inches.	Will Pass Solids, Diameter. Inches.	Iron Pump, with Suction and Discharge Elbows, Flap Valve and Ejector.	
		10 Per Cent.	15 Per Cent.	20 Per Cent.				Cipher.	Price.
4	4 in.	14 yds.	21 yds.	28 yds.	4	40 x 31	2	Remaeh	$210.00
6	6 "	30 "	45 "	60 "	8	68 x 40	4½	Remafg	300.00
8	8 "	60 "	90 "	120 "	15	72 x 48	6	Remago	475.00
10	10 "	90 "	135 "	180 "	25	94 x 54	8	Remahl	600.00
12	12 "	125 "	190 "	250 "	30	114 x 66	10	Repeme	850.00
15	15 "	210 "	315 "	420 "	50	154 x 78	10	Recens	[illegible]
18	18 "	300 "	450 "	600 "	70	160 x 80	10	Repeel	[illegible]

GOULDS CENTRIFUGAL PUMP FITTINGS.

Ejectors are used for priming or charging Centrifugal Pumps where steam can be obtained. A Flap Valve or Foot Valve, as shown below, or Gate Valve, see page 298, is used in connection with Ejector.

Ejector.

SIZES, PRICES, ETC.

Number and Size Centrifugal Pumps	1½ and 1¾	2 and 2½	3	4	5 and 6	8 and 10	12 and 15	18	22
Number of Ejector	1	1	2	3	4	5	6	7	8
Diameter of Steam Pipe	⅜ in.	⅜ in.	½ in.	¾ in.	1 in.	1 in.	1¼ in.	1¼ in.	2 in.
Diameter of Delivery and Suction Pipe	½ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	2½ in.	3 in.
Price of Ejector and Valves for Connecting	$8	$8	$12	$15	$25	$30	$35	$45	$55

Flap Valve.

Foot Valve.

Long Radius Elbow, Plain.

Long Radius Swivel Elbow.

Flap Valve is used on end of discharge pipe to prevent air from entering when using Ejector. (If Gate Valve is preferred, see page 298.)

Foot Valve is used on end of suction pipe to hold column of water and keep pump primed. Iron Foot Valves only furnished with strainer when ordered.

Long Radius Plain Cast Iron Elbow is very desirable for use on Centrifugal Pump, as it does not impede the flow of water as does a short turn.

Long Radius Swivel Elbow performs the same office as the Plain one described above, but is often found more convenient.

FLAP VALVES AND FOOT VALVES. SIZES, PRICES, ETC.

For Centrifugal Pump No.	1½	1¾	2	2½	3	4	5	6	8	10	12	15	18	22
Flap Valve, Flanged	$5	$6	$8	$9	$9	$13	$19	$22	$28	$36	$44	$60	$88	$150
Foot Valve, Iron, Flanged	5	6	7	8	9	12	15	20	30	40	50	75	110	150
" Brass "	8	9	12	15	18	25	30	40	....	....	....	....	....	....

LONG RADIUS PLAIN AND SWIVEL ELBOWS. SIZES, PRICES, ETC.

Size.	1½-inch	1¾-inch	2-inch	2½-inch	3-inch	4-inch	5-inch	6-inch	8-inch	10-inch	12-inch	14-inch	15-inch	18-inch	20-inch	22-inch
Plain Iron Elbow	$1.00	$1.2	$1.50	$1.75	$2.50	$3.50	$4.00	$5.00	$10.00	$15.00	$17.50	$22.00	$25.00	$30.00	$38.00	$50.00
Swivel Iron Elbow	1.25	1.60	1.90	2.10	3.15	4.40	5.00	6.25	12.50	19.00	22.00	27.00	31.50	37.50	47.50	62.00

GOULDS "ALERT" DOUBLE-ACTING POWER PUMP.

FOR ELEVATIONS TO FIFTY FEET OR EQUIVALENT PRESSURE.

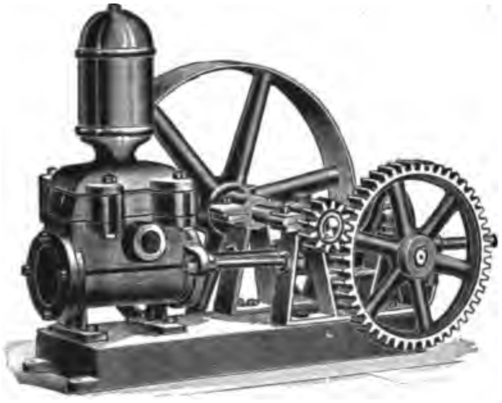


FIG. 785½

Fig. 785½ is a Light Service Tank Pump. It has a substantial bed plate, machine cut gear and pinion, pulley to be driven by belt (tight and loose pulleys and out-board bearing at extra price), leather valves, brass-cased piston rod, cup leather packed piston. Suction and discharge connections on either side of pump tapped for standard wrought-iron pipe. Fitted for hose at extra price.

FIG. 785½. SIZES, PRICES, ETC.

PISTON.		Capacity 1 Rev. of Crank Shaft.	Suc. Pipe.	Dis-charge Pipe.	Geared Pulley.		IRON.		BRASS-LINED.	
Dia.	Stroke.						Cipher	Price.	Cipher	Price.
3 in.	5 in.	.31 gal.	1¼ in.	1 in.	4 to 1	20 x 3 in	Zoon	$55.00	Regebs	$58.50
3½ "	5 "	.42 "	1½ "	1¼ "	4 to 1	20 x 3 "	Zope	60.00	Regeck	65.00
4 "	5 "	.54 "	1½ "	1¼ "	4 to 1	20 x 3 "	Zoril	70.00	Regedu	75.00

DOUBLE-ACTING POWER PUMP.

FOR ELEVATION TO TWENTY-FIVE FEET OR EQUIVALENT PRESSURE

Fig. 1004, Power Double-Acting Suction and Force Pump, is mounted on bed plate, has tight and loose pulleys, brass-lined cylinder, brass valves and valve seats. The discharge valves are accessible through ports or hand holes closed with plugs, or the suction valves below may be reached by removing either cylinder head. The solid piston is double crimped packed. Brass-cased piston rod works through brass stuffing box. Pump is designed only for working against very low head or pressure and should be run not above 20 to 25 R. P. M. Has special application as Circulating Pump, also for pumping oil from tank cars.

FIG. 1004. SIZE, PRICE, ETC.

PISTON.		Capacity one Rev. of Crank Shaft.	Suction.	Discharge.	Pulleys, Each.	Cipher.	Brass-Lined.
Dia.	Stroke.						
5 in.	5 in.	.86 gal.	2 in. pipe	2 in. pipe	20 x 4 in.	Baldrib	$75.00

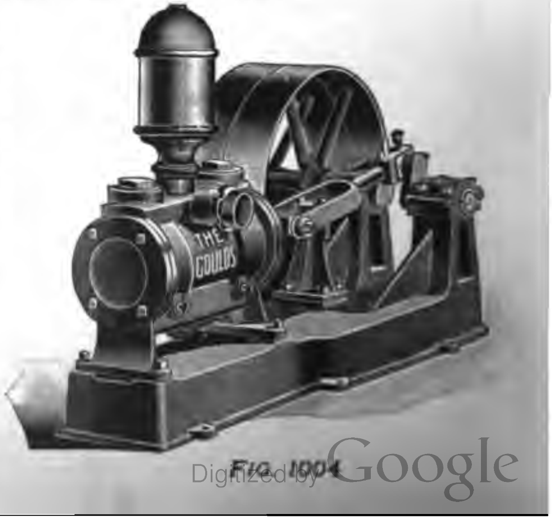


FIG. 1004

GOULDS "CHALLENGE" DOUBLE-ACTING POWER PUMP.

FOR ELEVATIONS TO 75 FEET OR EQUIVALENT PRESSURE.

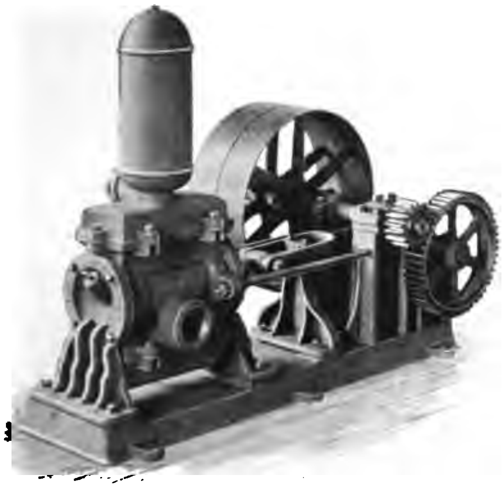


FIG. 824½. SIZE 6" x 5"

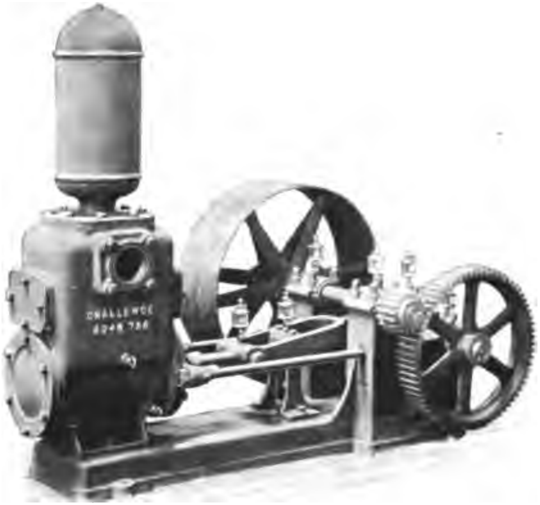


FIG. 824½. SIZE 7" x 6"

Fig. 824½, "Challenge" Double-Acting Power Pump, is adapted for light work, such as filling tanks, circulating brine, maintaining vacuum, etc. A substantial bed-plate extends the whole length of the Pump, affording a rigid support and permanent alignment for the working parts and cylinder. All Pumps have machine-cut gears, tight and loose pulleys, babbitted bearing, sight-feed oil cups; piston, cupped-leather packed; brass valve seats, brass glands and brass-cased piston rod. Two and one-half-inch, three and four-inch Pumps have brass valves ground to seats. Five, six, seven and eight-inch Pumps have rubber discs valves. Fibrous or metallic-spring packed pistons to order, at extra price.

Above is given detail of our *standard construction*. *When so ordered*, we modify their construction to suit particular requirements.

FIG. 824½. SIZES, CAPACITIES, ETC.

Piston.		Capacity One Rev. of Crank Shaft.	Usual Speed and Capacity per Minute.	Suction.	Dis.	Geared	Tight and Loose Pulleys.	Brass-Lined Cylinder.		Brass Cylinder.		*All Brass.	
Dia.	Stroke.							Cipher.	Price	Cipher	Price.	Cipher.	Price.
2½ in.	4½ in.	.20 gals.	30 to 40 revs., 6.0 to 8.0 gals.	1¼ in. pipe	1 in. pipe	4 to 1	20 x 3 in.	Zoste	$85.00	Ridema	$115.00	Rigust	$150.00
3 "	4½ "	.27 "	30 to 40 " 8.1 to 10.8 "	1¼ "	1¼ "	4 to 1	20 x 3 "	Zostera	90.00	Riguls	120.00	Rigute	155.00
4 "	4½ "	.50 "	30 to 40 " 15.0 to 20.0 "	1½ "	1¼ "	4 to 1	20 x 3 "	Zouave	95.00	Rigumd	130.00	Riguvo	170.00
5 "	5 "	.85 "	30 to 40 " 25.5 to 34.0 "	2 "	1½ "	3 to 1	20 x 4 "	Zound	125.00	Riguni	175.00	Rihads	260.00
6 "	5 "	1.22 "	30 to 40 " 36.6 to 48.8 "	2½ "	2 "	3 to 1	20 x 4 "	Zuche	150.00	Riguop	220.00	Rinemi	320.00
7 "	6 "	2.00 "	30 to 40 " 60.0 to 80.0 "	3 "	3 "	4 to 1	24 x 4 "	Zynat	250.00	Rigupa	425.00	Rintal	550.00
8 "	6 "	2.60 "	30 to 40 " 78.0 to 104.0 "	4 "	4 "	4 to 1	24 x 4 "	Zyned	300.00	Riguri	500.00	Rintet	650.00

*** All-brass Pumps have all parts of brass, except the bed-plate and driving parts.**

GOULDS HORIZONTAL TANK PUMP.

FOR ELEVATIONS TO 75 FEET, EQUIVALENT TO 32 POUNDS PRESSURE.

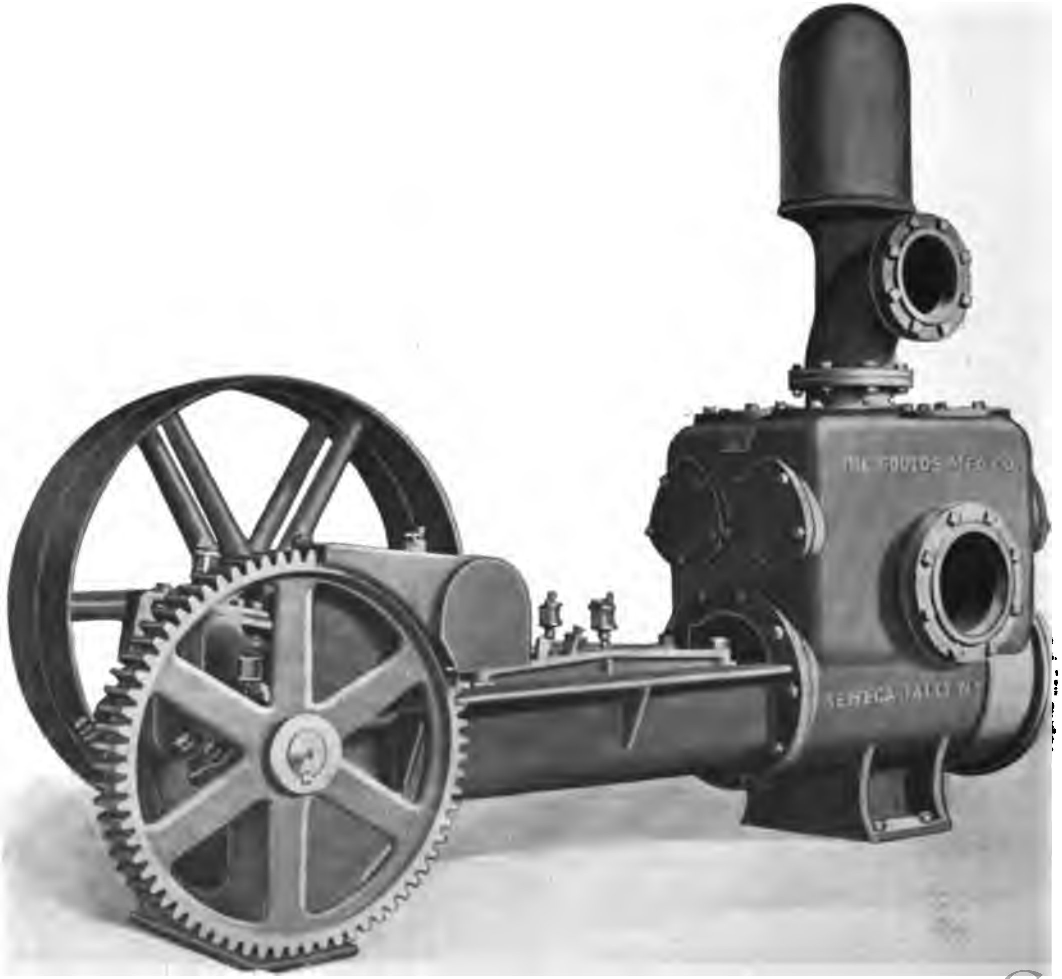


FIG. 1114. SIZE 12″ x 16″

GOULDS HORIZONTAL TANK PUMP.

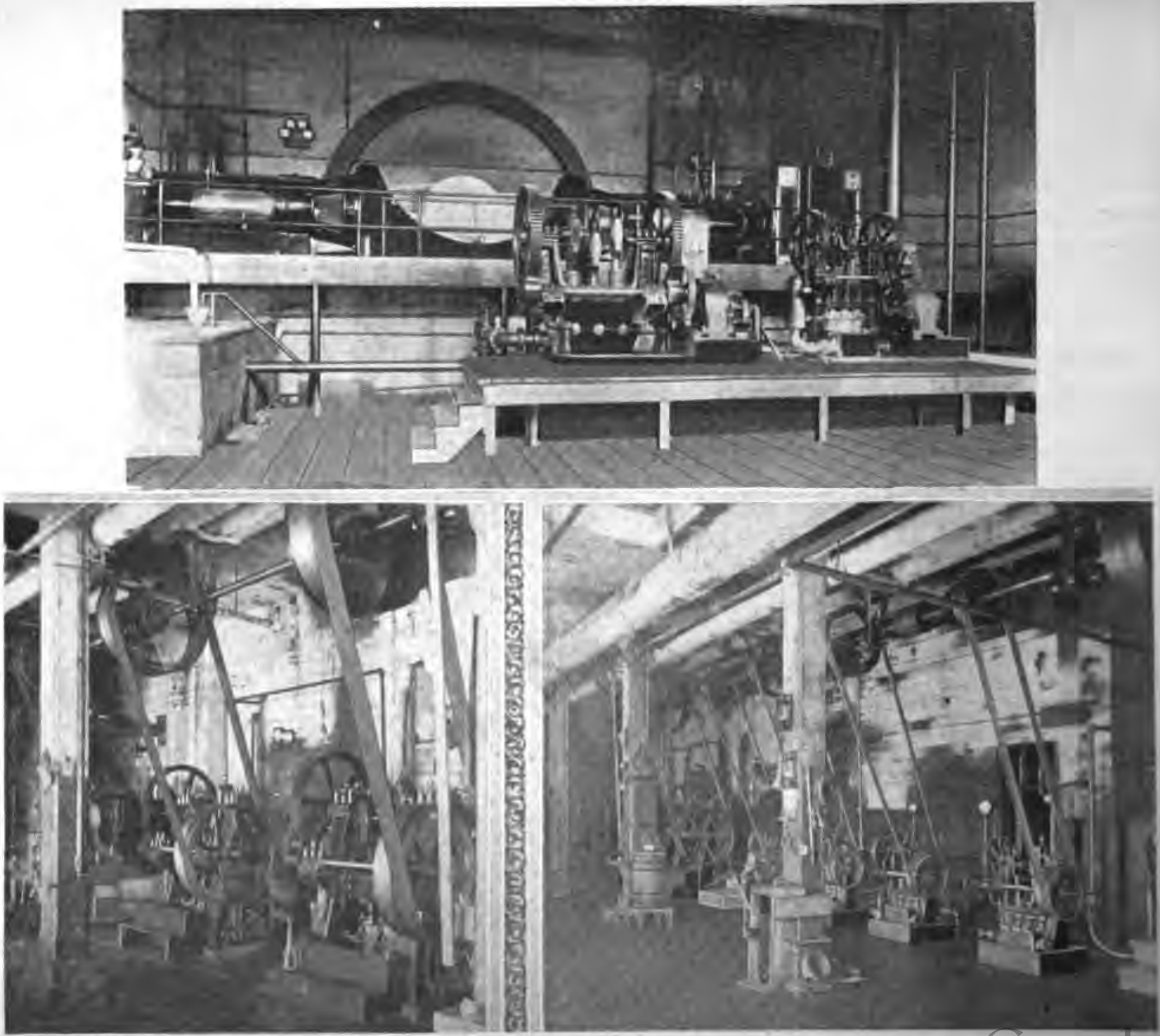
FOR ELEVATIONS TO 75 FEET, EQUIVALENT TO 32 POUNDS PRESSURE.

Fig. 1114 is a Horizontal Pump for light service. It has one cylinder with a double-acting piston, and is intended for pumping water to tanks, circulating brine, or other fluids, irrigation, etc.

The cylinder is fitted with removable bronze lining. The piston is packed with fibrous packing. The piston rod is of steel. The crosshead runs in adjustable guides. The crank and crosshead pins have adjustable bronze boxes. The gearing is machine-cut. Tight and loose pulleys. Slight-feed oil cups. Suction pipe may be connected at either side of the cylinder.

FIG. 1114 SIZES, CAPACITIES, ETC

PISTONS.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter	Stroke.			Suction.	Discharge.			
8 in.	10 in.	4.25 gals.	30 revs., 127 gals.	5 in.	5 in.	4 to 1	30 x 5 in.	Treadl
10 "	10 "	6.5 "	30 " 195 "	7 "	6 "	4 to 1	30 x 6 "	Treaef
10 "	14 "	9.5 "	30 " 285 "	8 "	6 "	4 to 1	36 x 6 "	Treaba
12 "	16 "	15.4 "	30 " 462 "	10 "	8 "	4 to 1	42 x 6 "	Treact
14 "	18 "	24. "	30 " 720 "	12 "	10 "	4 to 1	48 x 8 "	Trevob



GOULDS TRIPLEX POWER PUMPS IN MILLS AND FACTORIES.

GOULDS TRIPLEX POWER PUMP.

Gould's Triplex Power Pump, by its continuous action of parts, produces a constant flow of fluids and develops highest efficiency. Efficiency is the ratio between the effective, or useful, work and the total work put into a machine. The effective, or theoretical, work of a Pump lifting water is the quantity of water lifted to a certain height. When the rate of doing this work of pumping is considered it is measured in horse power. The actual horse power consumed in pumping water includes, not only the delivery of a certain quantity to a given height, but also the power required to overcome its inertia, viz.: to start it from a state of rest and to stop it; its friction in passing through the pipes and the Pump; and the inertia and friction of the working parts of the Pump.

While it is impracticable to build a Pump that will produce perfectly uniform action upon the water, the work wasted in this particular by the Triplex is only about one-third of that wasted in the best designed duplex or four-plunger Pumps; and in this respect the single Pumps are unworthy of comparison.

Among pumping devices depending upon steam are:

Injectors and Inspirators, using about	**100**	**lbs. Coal per H. P. Hour.**
Pulsometers, using about	**67**	**" " " " "**
Small steam pumps using about	**25**	**" " " " "**
Larger steam pumps, compounded, using about	**13**	**" " " " "**

The Power Pump participates in the economy of the Steam Engine, using from 1⅛ pounds of coal to five or six pounds per H. P. per hour.

Electrically operated Power Pumps are frequently employed under such conditions that the cost, aside from their convenience, is much in their favor.

The operating of Power Pumps by Gas or Gasoline Engines is rapidly coming into use, and at very low cost for fuel, and with expense for attendance reduced to a minimum.

We manufacture in quantities on the interchangeable plan. We use only high-grade materials and a modern shop equipment. Our Pumps are of handsome design, correctly proportioned, and exceptionally well built. All parts are accurately interchangeable and wearing parts are adjustable or easily renewed.

GOULDS TRIPLEX POWER PUMP FOR LIGHT SERVICE.

FOR ELEVATIONS TO 100 FEET, EQUIVALENT TO 43 POUNDS PRESSURE.

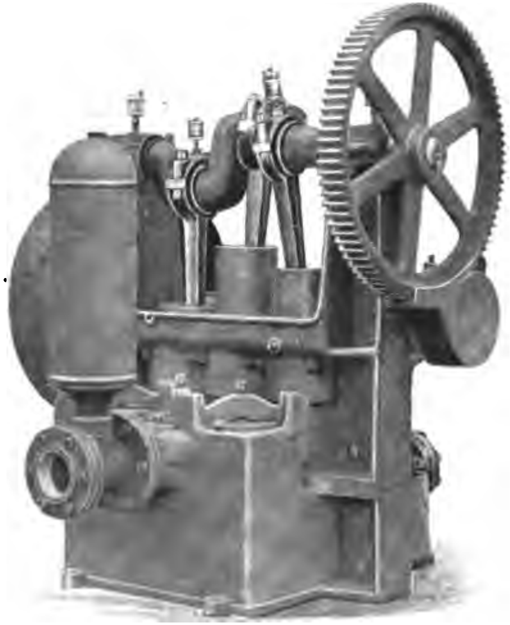


FIG. 957. SIZE 7" X 8"

Fig. 957, Triplex Power Pump, single acting, is designed and built especially for pumping water to tanks or reservoirs, directly into pipe systems, and for circulating fluids of any kind.

It is a special type of our Standard Triplex construction, having a large valve area, outside-packed plungers with water seal, bronze-lined crank boxes, machine-cut gear and pinion. It has tight and loose pulleys for belt drive from line shaft, or from gas or steam engine, or by electric motor.

Our regular construction: Iron plungers, cylinders and glands, with rubber disc valves for cold water. These parts made of other materials to order, adapting the Pump to a wide variety of service.

Prices upon application.

FIG. 957. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	Speed and Capacity per Minute.	SIZES OF PIPE.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
4 in.	6 in.	1.0 gals.	45 revs., 45 gals.	2 in.	2 in.	5 to 1	20 x 3	Wralvj
5 "	8 "	2.0 "	45 " 90 "	3 "	3 "	5 to 1	26 x 4	Wrahwl
7 "	8 "	4. "	45 " 180 "	5 "	5 "	5 to 1	30 x 5	Writbea
8 "	10 "	6.5 "	40 " 260 "	6 "	5 "	5 to 1	36 x 6	Writla
8 "	12 "	7.8 "	40 " 312 "	6 "	5 "	5 to 1	36 x 6	Wrekea

For Power Tables see page 203.
Methods of driving from electric motor, etc., see pages 188, 189.

GOULDS TRIPLEX POWER PUMP FOR GENERAL SERVICE.

FOR ELEVATIONS TO 300 FEET, EQUIVALENT TO 130 POUNDS PRESSURE.

Fig. 924 is the Pioneer Triplex Power Pump, single-acting, for general service, such as Water Supply, Hydraulic Pressure, Boiler Feeding, etc. It is compact, self-contained, well-built, and requires no special foundation. It has proven reliable and durable, and is the accepted pump for a wide variety of service.

The valves have rubber discs with bronze trimmings and seats, all easily accessible. The plungers are outside-packed and have water seal. Each connecting rod has bronze bushed bearing in plunger and adjustable bronze bearing at crank. The crank shaft is in one piece and runs in large babbitted bearings. The gear and pinion are machine cut. Tight and loose pulleys. Sight-feed oil cups.

Our regular construction is: Iron cylinders, glands, plungers, and rubber disc valves for hot or cold water, as ordered. Bronze plungers, bronze-lined cylinders and glands at extra price. State whether hot or cold water is to be pumped. Prices upon application.

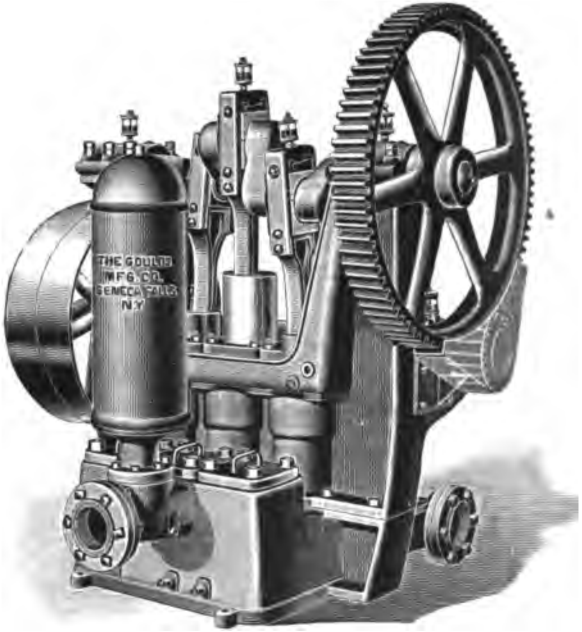

THE GOULDS MFG. CO. SENECA FALLS N.Y.

FIG. 924. 6½" X 8"

FIG. 924. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity one Revolution of Crank Shaft.	*Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
1¼ in.	2 in.	0.03 gal.	We build these sizes in Fig. 1009 type only, see page 183.					
1¾ "	2½ "	0.07 "						
2 "	3 "	0.12 "						
2½ "	4 "	0.25 "	50 Revs., 12 gals.	1½ in.	1½ in.	5 to 1	15 x 3 in.	Wench
3 "	4 "	0.36 "	50 " 18 "	1½ "	1½ "	5 to 1	15 x 3 "	Wend
4 "	4 "	0.65 "	45 " 29 "	2 "	2 "	5 to 1	20 x 3 "	Wennel
4 "	6 "	1.0 "	45 " 45 "	2 "	2 "	5 to 1	20 x 3 "	Wenta
5 "	6 "	1.5 "	45 " 67 "	3 "	3 "	5 to 1	26 x 4 "	Wereba
5 "	8 "	2.0 "	40 " 80 "	3 "	3 "	5 to 1	30 x 5 "	Werste
6½ "	8 "	3.4 "	40 " 136 "	4 "	4 "	5 to 1	30 x 6 "	Wooing
8 "	8 "	5.2 "	40 " 208 "	5 "	4 "	5 to 1	36 x 6 "	Werte
8 "	10 "	6.5 "	40 " 260 "	5 "	4 "	5 to 1	42 x 6 "	Zylode
9 "	10 "	8.2 "	40 " 328 "	6 "	5 "	6 to 1	42 x 8 "	Zylom

* Speed and Capacity for boiler feeding, see page 185. Power Table, see page, 203.
Methods of driving from Electric Motors, etc., see pages 188, 189.

GOULDS TRIPLEX POWER PUMP FOR GENERAL SERVICE.

FOR ELEVATIONS TO 250 FEET, EQUIVALENT TO 110 POUNDS PRESSURE.

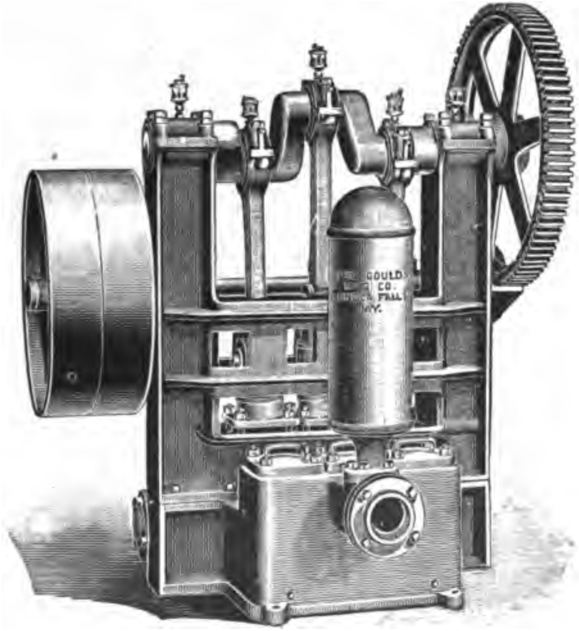


FIG. 1140. SIZE 6" X 8"

Fig. 1140, Triplex Power Pump, has three single-acting plungers, with crossheads and guides, which sustain the side thrust of the connecting rods, permitting the plungers to reciprocate through the packings, without lateral thrust. By this means the wear of the plungers, glands and packings is reduced to a minimum and the crosshead bearings are accessible. Connecting rod and crank shaft bearings are bronze-lined and adjustable for wear. Crosshead bearings are bronze bushed. Gearing is machine cut. Our regular construction provides for tight and loose pulleys and sight feed oil cups. Suction pipe connections are provided at both ends of the valve chest. There is one discharge connection located centrally on the discharge side. Pump is designed for general service, water supply, hydraulic pressure, etc., etc.

Prices upon application.

FIG. 1140. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
4 in.	6 in.	1.0 gals.	45 revs., 45 gals.	2 in.	2 in.	5 to 1	20 x 3 in.	Tobeul
5 "	8 "	2.0 "	45 " 90 "	3 "	3 "	5 to 1	30 x 5 "	Tobevy
6 "	8 "	2.9 "	45 " 130 "	4 "	4 "	5 to 1	30 x 6 "	Tobewx
7 "	8 "	4.0 "	45 " 180 "	4 "	4 "	5 to 1	30 x 6 "	Tobid
8 "	10 "	6.5 "	40 " 260 "	5 "	5 "	5 to 1	36 x 6 "	Tobick

For Power Tables, see page 203.

Methods of driving from Electric Motor, etc., see pages *188*, *189*.

GOULDS TRIPLEX POWER PUMP FOR GENERAL SERVICE.

FOR ELEVATIONS TO 350 FEET, EQUIVALENT TO 150 POUNDS PRESSURE.

Fig. 1009, Triplex Power Pump, has three single-acting plungers, with crossheads and guides which sustain the side thrust of the connecting rods, permitting the plungers to reciprocate through the packings without lateral thrust.

The crank shaft is in one piece and runs in bearings lined with best anti-friction metal. The connecting rod heads are provided with bronze boxes, made in halves, with strap-ends. The crosshead pins have bronze-lined boxes and the crossheads have bronze shoes, all adjustable for taking up wear. Machine-cut gear and pinion; tight and loose pulleys, and sight-feed oilers. Pump is recommended for boiler feeding, hydraulic pressure and general water supply.

Our regular construction is: Sizes, 1¼ x 2 to 2 x 3, inclusive; iron cylinders, bronze plungers and glands. Larger sizes; iron cylinders, plungers and glands, and rubber disc valves for hot or cold water, as ordered. Bronze plungers, bronze-lined cylinders and glands at extra price.

Data regarding boiler feeding on page 185.

Prices upon application.

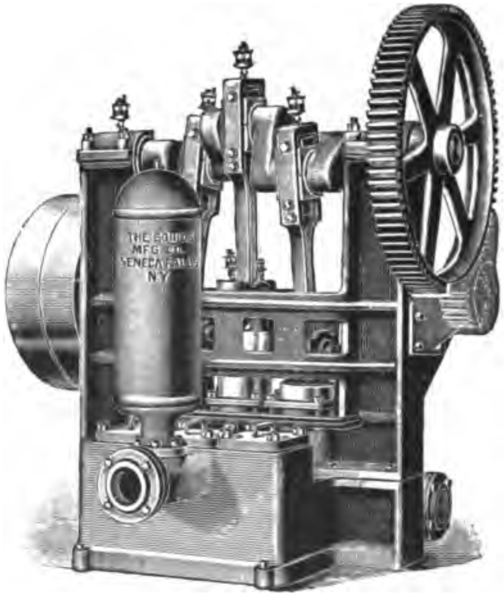
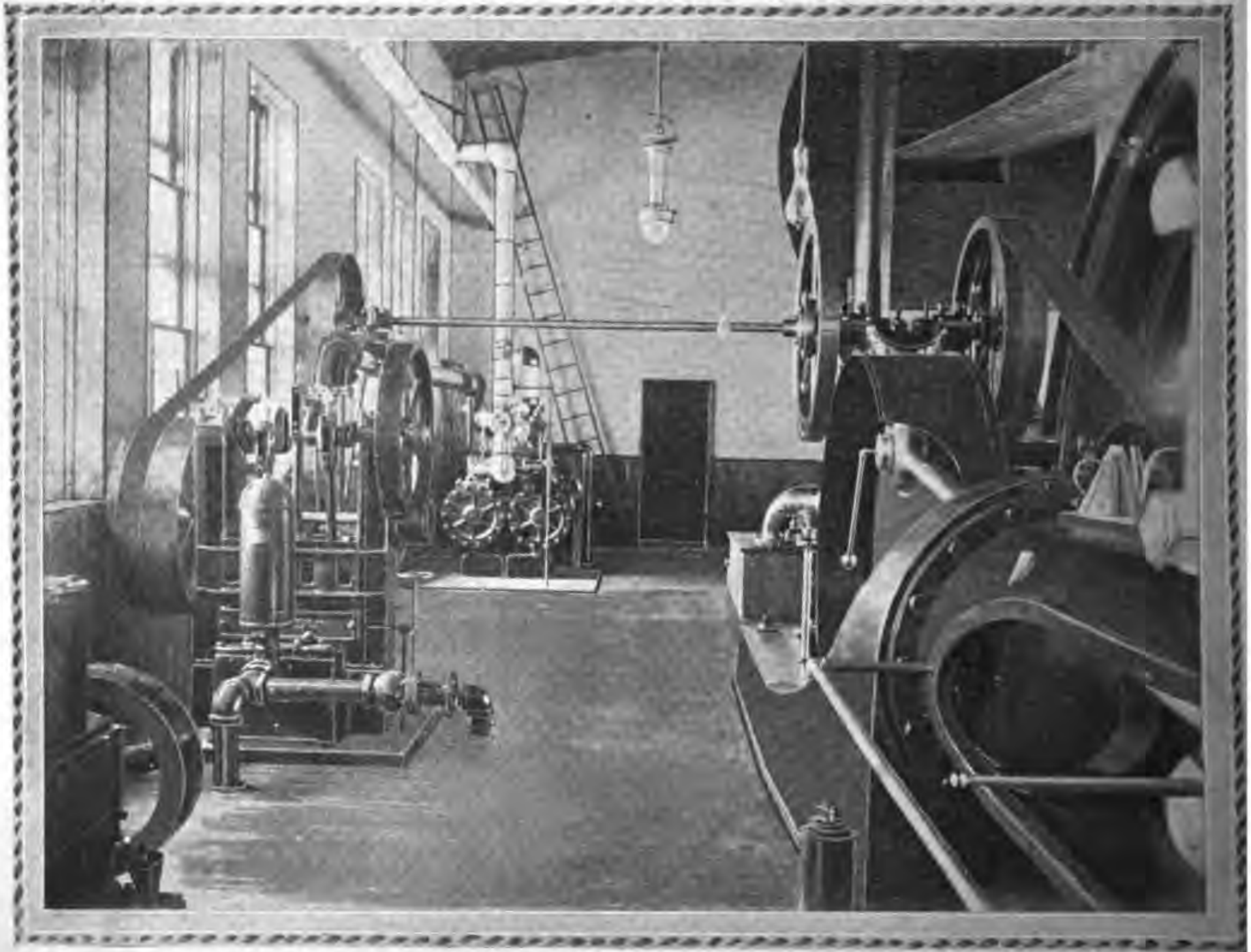

THE GOULDS MFG. CO. SENECA FALLS N.Y.

FIG. 1009. 6" X 8"

FIG. 1009. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.	*Usual Speed and Capacity per Minute.		Sizes of Pipe.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.				Suction.	Discharge.			
1¼ in.	2 in.	0.03 gals.	60 revs.,	1.8 gals.	¾ in.	¾ in.	5 to 1	12 x 1½ in.	Crag
1¾ "	2½ "	0.07 "	60 "	4.2 "	1 "	1 "	5 to 1	12 x 2½ "	Craggy
2 "	3 "	0.12 "	50 "	6 "	1¼ "	1¼ "	5 to 1	12 x 2½ "	Crachom
2½ "	4 "	0.25 '	50 "	12 "	1½ "	1½ "	5 to 1	15 x 3 "	Cragify
3½ "	4 "	0.5 "	50 "	25 "	2 "	2 "	5 to 1	15 x 3 "	Craftul
4 "	6 "	1.0 "	45 "	45 "	2 "	2 "	5 to 1	20 x 3 "	Crajum
5 "	6 "	1.5 "	45 "	67 "	3 "	3 "	5 to 1	26 x 4 "	Crajyx
5 "	8 "	2.0 "	40 "	80 "	3 "	3 "	5 to 1	30 x 5 "	Crakal
6 "	8 "	2.93 "	40 "	117 "	4 "	4 "	5 to 1	30 x 6 "	Cusick
7 "	8 "	4.0 "	40 "	160 "	4 "	4 "	5 to 1	36 x 6 "	Cusjoe
8 "	10 "	6.5 "	40 "	260 "	5 "	5 "	5 to 1	42 x 6	Cuskus

Speed and Capacity for Boiler Feeding, see page 185. Power Table, see page 208.
Methods of driving from Electric Motors, etc., pages 188, 189.



A MODERN POWER HOUSE, WITH GOULDS TRIPLEX POWER BOILER FEED PUMP.

See Fig. 1157, page 186, and Fig. 1009, page 183.

GOULDS TRIPLEX POWER PUMPS FOR BOILER FEEDING.

ESTIMATE TABLE SHOWING QUANTITY FEED WATER REQUIRED FOR BOILERS, AND SIZE SINGLE-ACTING TRIPLEX PUMP FOR DELIVERING THIS QUANTITY.

Table is based on 30 pounds feed water per horse power per hour, which is the standard adopted by the American Society of Mechanical Engineers, and is the generally accepted commercial standard by boilermakers and users.

Size Boiler.	Quantity Feed Water Required.	Valves and Connections.	*Size Triplex Pump.
50 H. P.	3 gals. minute	1 in.	2 x 3 in.
100 "	6 " "	1 "	2½ x 4 "
200 "	12 " "	1¼ "	3½ x 4 "
250 "	15 " "	1¼ "	3½ x 4 "
300 "	18 " "	1¼ "	4 x 6 "
400 "	24 " "	1¼ "	4 x 6 "
500 "	30 " "	1½ "	5 x 6 "
600 "	36 " "	1½ "	5 x 6 "
800 "	48 " "	1½ "	5 x 8 "
1,000 "	60 " "	1½ "	5 x 8 "
1,200 "	72 " "	2 "	6 x 8 "
1,500 "	90 " "	2½ "	7 x 8 "
1,800 "	108 " "	2½ "	7 x 8 "
2,200 "	132 " "	2½ "	7 x 10 "
3,000 "	180 " "	2½ "	8 x 10 "
3,500 "	210 " "	2½ "	8 x 10 "
4,500 "	270 " "	3 "	8½ x 12 "
6,000 "	360 " "	4 "	10 x 12 "

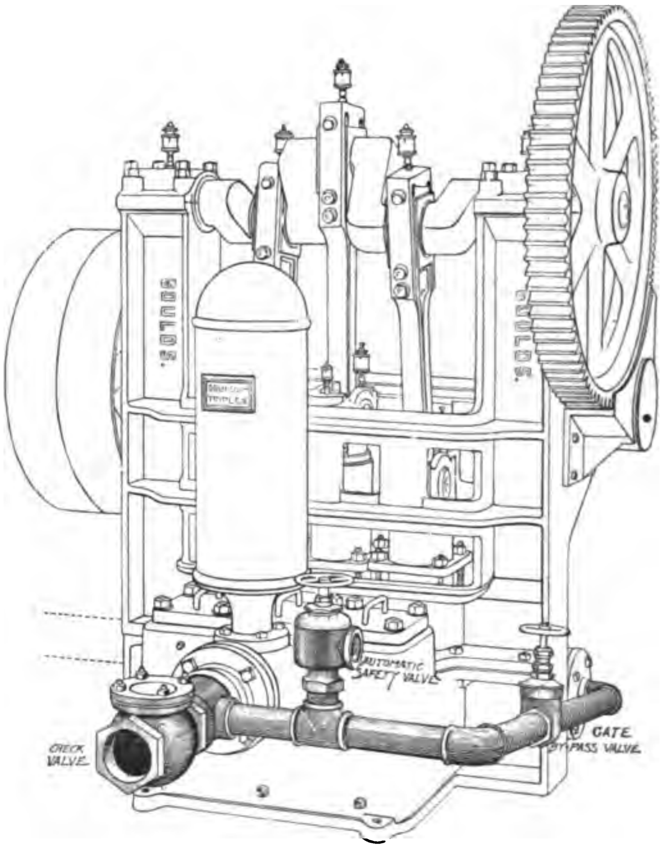


PLATE "E"

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*Based upon a moderate speed of 25 R. P. M. of Pump Crank Shaft.

Pumps fitted as above, with by-pass and water relief, to order.

GOULDS TRIPLEX HIGH-PRESSURE BOILER-FEED PUMP.

FOR PRESSURE TO 200 POUNDS, EQUIVALENT TO 460 FEET ELEVATION.

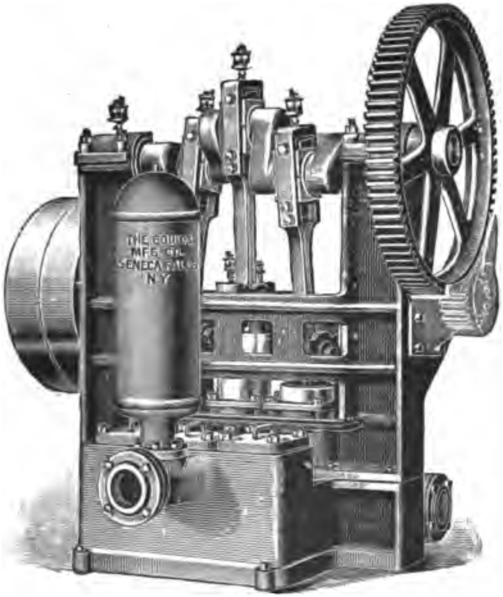


FIG. 1157 SIZE 6" X 8"

Compound Engines and High Pressure Boilers are rapidly coming into use. We are supplying Power Boiler Feed Pumps for pressures up to and exceeding 200 pounds per square inch.

Fig. 1157, for High Pressure Boiler Feeding and other heavy pumping, has distinctive features especially adapting it to hard service. Outside connected plungers with cross-heads and guides, connecting rods with strap ends and phosphor bronze boxes, heavy bearings, extra weight and stiffness throughout.

Our regular construction provides cylinders, plungers, and glands of iron, and valves for cold or hot water. We furnish plungers, etc., of phosphor bronze, when so ordered, at extra price.

Correspondents should carefully specify the work to be done, stating the kind and volume of fluid to be pumped, the pressure at the pump, and other conditions.

Prices upon application.

FIG. 1157. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	*Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
1½ in.	3 in.	.07 gal.	40 revs., 2.8 gals.	1¼ in.	1¼ in.	5 to 1	12 x 2½ in.	Rusebis
2 "	4 "	.16 "	35 " 5.7 "	1½ "	1½ "	5 to 1	15 x 3 "	Sapioa
3 "	4 "	.36 "	35 " 12 "	2 "	2 "	5 to 1	15 x 3 "	Sapiuer
3½ "	6 "	0.74 "	30 " 22 "	2 "	2 "	5 to 1	20 x 3 "	Tobem
4 "	8 "	1.3 "	30 " 39 "	2½ "	2½ "	5 to 1	30 x 5 "	Tobens
5 "	8 "	2.0 "	30 " 60 "	3 "	3 "	5 to 1	30 x 6 "	Tobepe
6 "	8 "	2.9 "	30 " 87 "	4 "	4 "	5 to 1	36 x 6 "	Toberd
7 "	10 "	5.0 "	30 " 150 "	5 "	5 "	5 to 1	42 x 6 "	Tobest

*Speed and capacity for boiler feeding, see page 185. Power Table, see page 208.

Methods of driving from Electric Motors, etc., see pages 188, 189.

GOULDS TRIPLEX POWER PRESSURE PUMP.

Fig. 997, Triplex Power Pressure Pump, is for use with filter presses, hydraulic presses and cranes, in oil refineries, on pipe lines, and for other service where the pressure exceeds the ordinary 100 to 200 pounds per square inch. It is vertical and self-contained. The plungers are single-acting, outside guided and connected, outside packed, and driven by a powerfully geared three-throw crank shaft.

Size No. M and smaller have Bronze Cylinders and Glands. The steel plungers are fitted with cup leather or fibrous packing according to intended service. The crossheads are of the cylindrical type and run in bored guides.

Size No. 1 and larger (type illustrated) have Bronze-Lined Cylinders and Glands with Steel Plungers. The crossheads have bronze shoes and run in bored guides. Air chambers are furnished only on sizes, D, E, G and H.

All sizes have metal valves, bronze main bearings for the crank shafts, bronze crank pin and crosshead pin boxes, machine-cut gearing tight and loose pulleys, and sight-feed oil cups. Special construction, including Bronze Plungers, to order. Prices upon application.

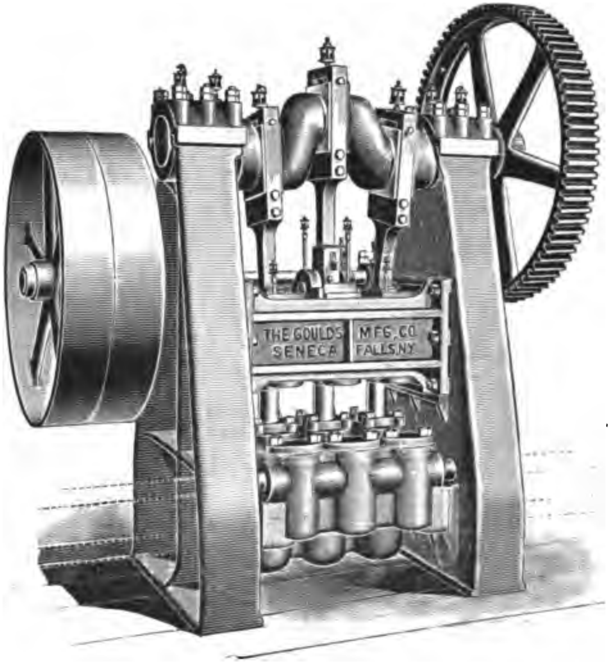

THE GOULDS MFG. CO.
SENECA FALLS, N.Y.

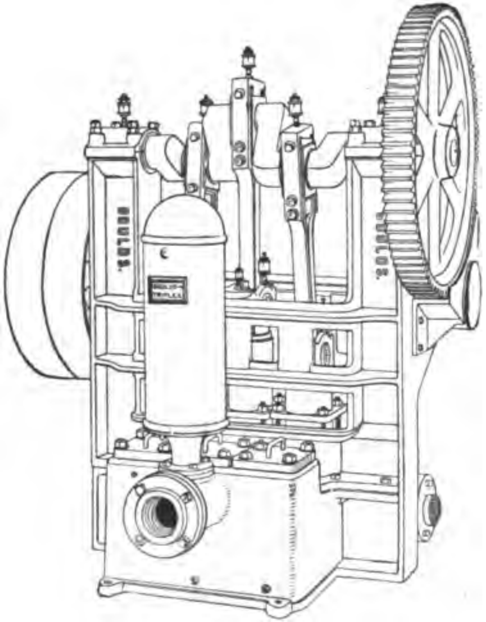
FIG. 997. NO. F, SIZE 3" x 8"

FIG. 997. SIZES, CAPACITIES, ETC.

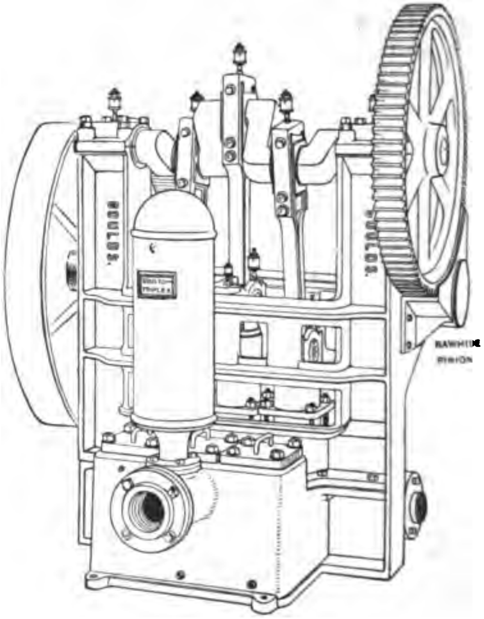
No.	Plungers.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	Limit Pressure per Square Inch.	Sizes of Pipe.		Geared.	Tight and Loose Pulleys.	Cipher.
	Diameter.	Stroke.				Suction.	Discharge.			
A	1 in.	4 in.	.04 gals.	40 revs., 1.6 gals.	1500 lbs.	1¼ in.	1 in.	5 to 1	15 x 3 in.	Riteho
K	1¼ "	4 "	.06 "	40 " 2.4 "	900 "	1¼ "	1 "	5 to 1	15 x 3 "	Ritell
B	¾ "	6 "	.03 "	40 " 1.2 "	5000 "	1 "	¾ "	7 to 1	26 x 4 "	Ritejm
L	1¼ "	6 "	.09 "	40 " 3.6 "	1800 "	1¼ "	1 "	7 to 1	26 x 4 "	Riteka
M	1½ "	6 "	.13 "	40 " 5.2 "	1200 "	1¼ "	1 "	7 to 1	26 x 4 "	Ridefu
S	2¼ "	6 "	.30 "	40 " 12.0 "	1500 "	2 "	1½ "	5 to 1	30 x 5 "	Ridegsl
N	3 "	6 "	.55 "	40 " 22.0 "	650 "	2 "	2 "	5 to 1	30 x 5 "	Ridehm
P	4 "	6 "	1. "	40 " 40.0 "	350 "	2 "	2 "	5 to 1	30 x 5 "	Rideis
R	5 "	6 "	1.53 "	40 " 61.0 "	240 "	3 "	3 "	5 to 1	30 x 5 "	Roatila
C	2¼ "	8 "	.41 "	40 " 16.4 "	1500 "	3 "	2 "	5 to 1	36 x 6½ "	Roatat
D	4½ "	8 "	1.65 "	40 " 66.0 "	400 "	3 "	3 "	5 to 1	36 x 6½ "	Roatem
E	6½ "	8 "	3.44 "	40 ' 137.0 "	200 "	4 "	4 "	5 to 1	36 x 6½ "	Roatfo
F	3 "	8 "	.73 "	40 " 29.2 "	1500 "	3 "	2 "	5 to 1	42 x 6½ "	Roatget
G	4½ "	8 "	1.65 "	40 " 66.0 "	600 "	3 "	3 "	5 to 1	42 x 6½ "	Roatgof
H	6½ "	8 "	3.44 "	40 " 137.0 "	300 "	4 "	4 "	5 to 1	42 x 6½ "	Roathad

For Power Tables see page 203. Methods of driving from electric motors, etc., pages 188, 189.

DRIVING CONNECTIONS FOR TRIPLEX POWER PUMPS.



Standard Construction. Tight and Loose Pulleys for Belt from Counter Shaft or Engine.



FORM "B" (Cipher, **Form B.**)

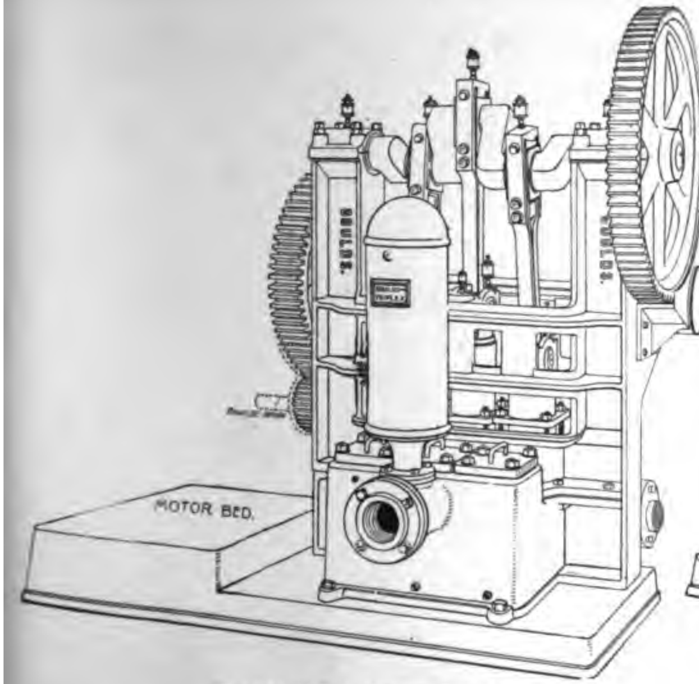
With Rawhide Pinion and Single Pulley for Belt from Electric Motor.

Outline engravings on this and following page are intended to represent a general type of Triplex Power Pump with changes in form of driving connections which can be applied (with some small modifications) to any of our Pumps.

Standard construction tight and loose pulleys. Under this form we catalogue our several types as Figs. 924, 1009, etc., and refer to previous pages for details.

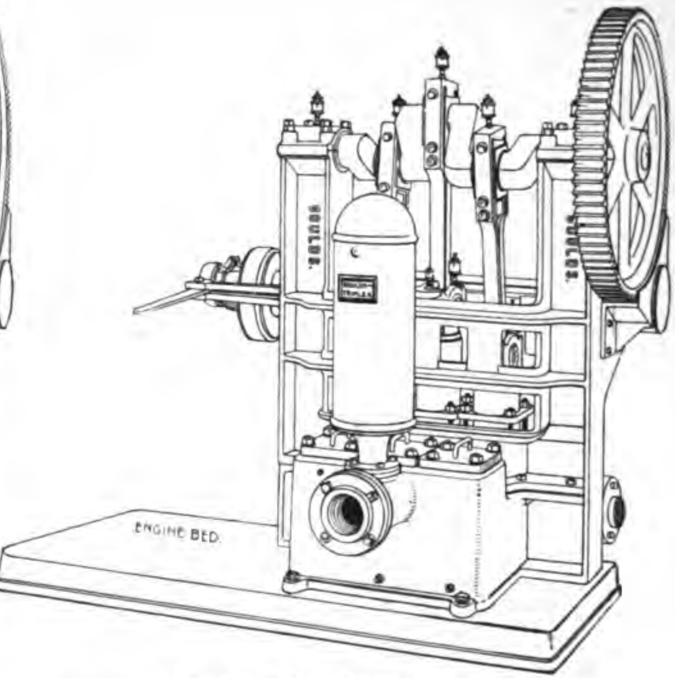
Form "B," with rawhide pinion and single pulley for belt drive from electric or other high speed motor. This form of belt drive is practically noiseless and wherever space will permit, and dampness does not prohibit, we recommend it. Always specify dimensions and speed of motor pulley and required number of gallons per minute.

Form "C," intermediate gearing, rawhide motor pinion and bed plate for geared connections to electric motor. We cannot recommend as perfectly noiseless, or for this reason adapted for house use. In damp places, where noise is no objection, or in places where economy of space is a first requisite we recommend. Orders should be accompanied by detail motor drawings. State required number of gallons per minute. In Figs. 957 and 924, types motors are usually placed behind pumps, instead of at end as shown. In largest sizes of pumps bed plates are sometimes dispensed with.



FORM "C" (Cipher, Form C.)

Intermediate Gearing, Rawhide Motor Pinion and Bed Plate for Geared Connection to Electric Motor.



FORM "D" (Cipher, Form D.)

Friction Clutch for Direct Connection to Engine Shaft. With or Without Bed Plate.

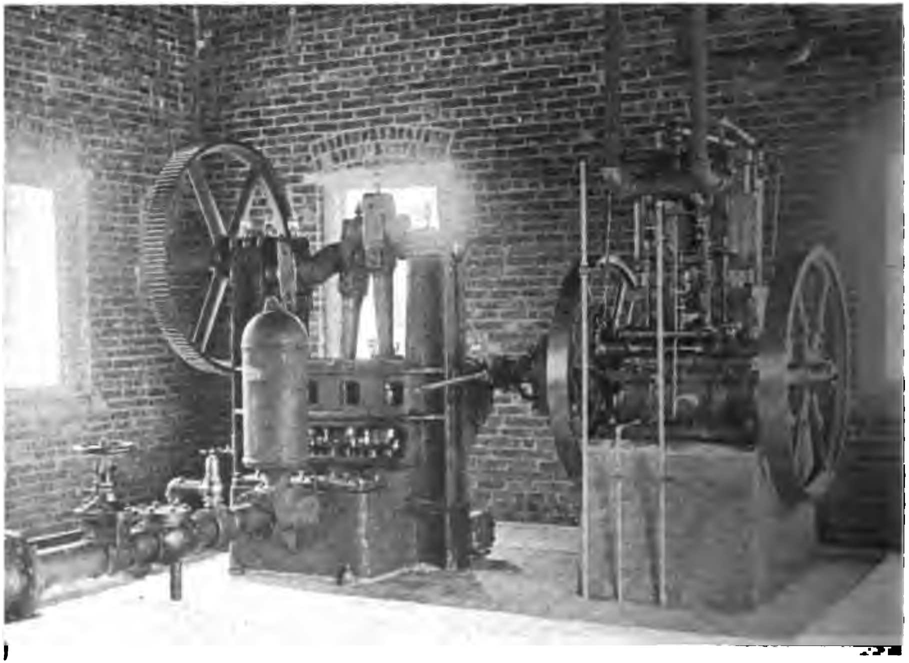
Form "D," for friction clutch connection to engine shaft; a very satisfactory connection to steam, gas and gasoline engines where speed conditions will allow. Always specify speed of engine shaft and required number of gallons per minute. Can be furnished with or without bed plate.

Any of these forms of driving connections may be applied to following figures to which we refer:

Fig. 957.	Triplex Power Pump	page 180
Fig. 924.	" " "	" 181
Fig. 1140.	" " "	" 182
Fig. 1009.	" " "	" 183
Fig. 1157.	" " "	" 186
Fig. 997.	" " "	" 187

Prices upon application.

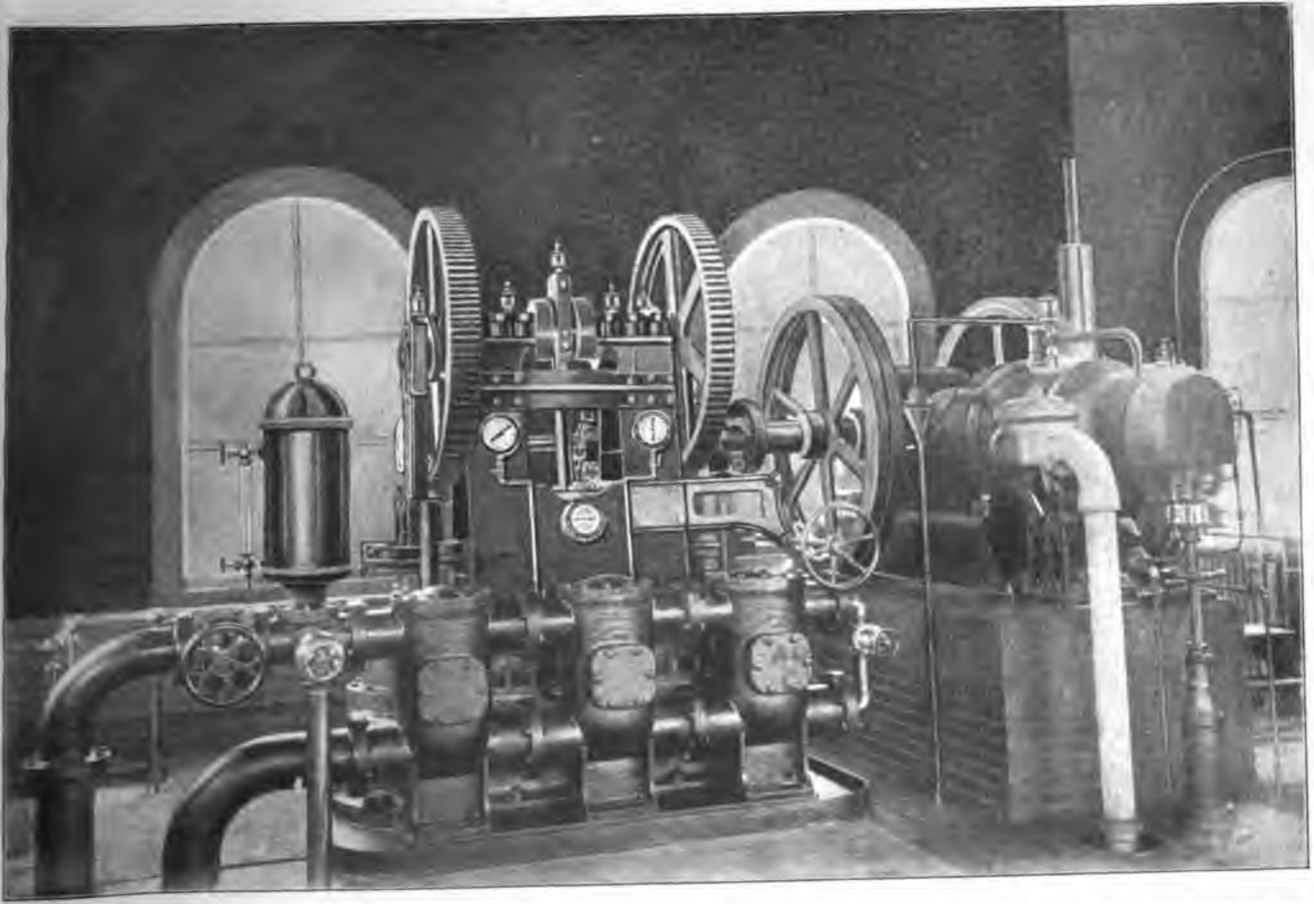
In telegraphing, place cipher representing desired Form immediately after cipher standing for type and size Pump selected.



One of the most convenient and economical methods of pumping for village water works, irrigation, railroad tanks, etc., is by the use of our Triplex Power Pump, driven by gas or gasoline engine. The equipment is so simple, so easily managed, so quickly started and stopped, and runs for such long intervals without attention, that cost for labor is reduced to a minimum, or entirely eliminated.

Gas and gasoline are cheaper than coal for power in small units, and are less bulky and expensive to handle.

We are annually installing a considerable number of pumping plants with gas or gasoline engines for village water works, etc., in all cases with gratifying success. We shall be pleased to correspond with parties who contemplate purchasing pumps for this line of work.



We can supply Triplex Pumps, complete and ready for erecting, with any type of gas or gasoline engine, or the Pump, friction clutch, and sub-base without Engine, or the Pump alone, as purchasers prefer. The size of Pump and type of engine are factors in making the combination. For pumps of the smaller sizes, cast iron sub-base is desirable, as it affords a rigid and permanent alignment of the Pump and Engine. By its use, expense for other foundation is slight. Arrangement generally used is that shown in illustration. Friction clutch between Pump and Engine allows starting of engine without load. Triplex Power Pumps, pages 180 to 199, are adapted for this service.

GOULDS SINGLE-ACTING TRIPLEX POWER PUMP.

For Elevations to 300 Feet, Equivalent to 130 Pounds Pressure.

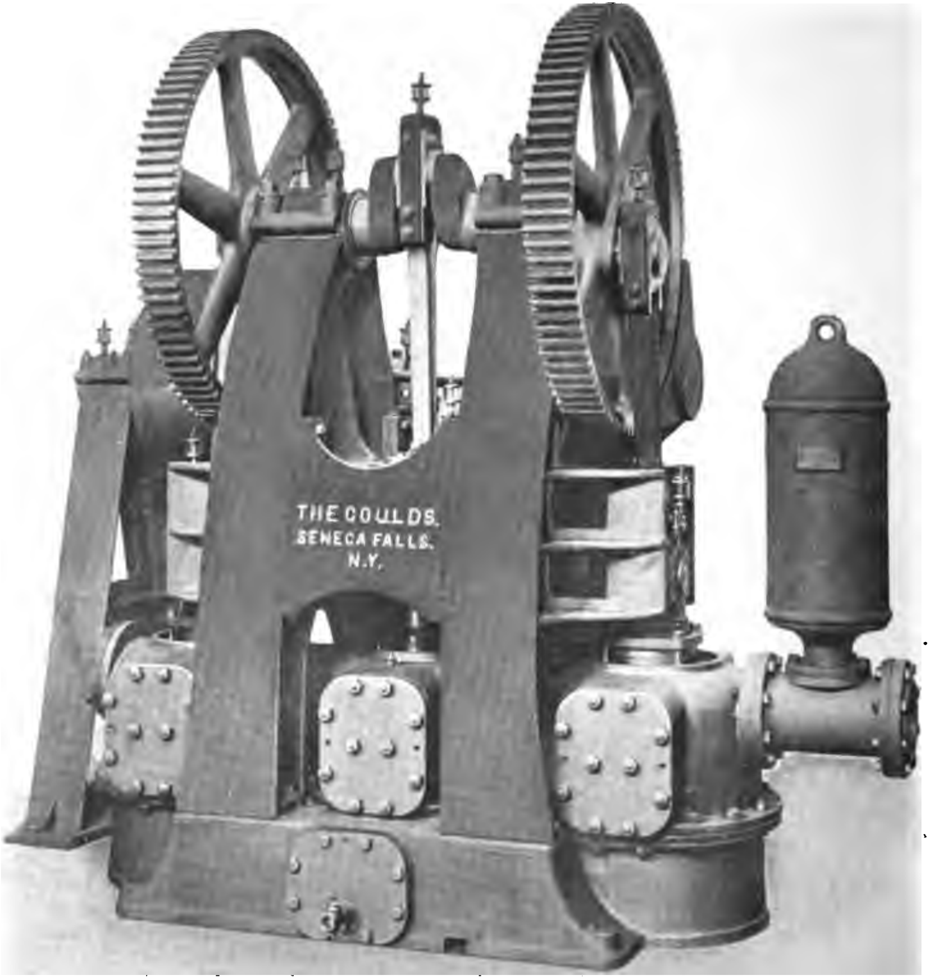


Fig. 1227   Size 8½" x 12".

GOULDS SINGLE-ACTING TRIPLEX POWER PUMP.

FOR ELEVATIONS TO 300 FEET, EQUIVALENT TO 130 POUNDS PRESSURE.

Fig. 1227, illustrated on preceding page, shows our new type of Single-Acting Triplex Power Pump. It is designed for a wide variety of service, including Water Supply, Hydraulic Elevator Work, Water Works, etc. The base forms a rigid foundation for the working parts of the Pump, and contains the suction chamber. The valves are contained in the cylinder casting, doing away with outside valve boxes and making a most compact and accessible Pump. It has three single-acting plungers, outside packed and outside guided and connected.

The crossheads have bronze shoes, adjustable for taking up the wear. Each connecting rod, at the crank, has a bronze box with strap and taper attachment, and, at the crosshead pin, a bronze bearing, adjustable for wear. The valve area is ample for fast running and full capacity.

Power for driving is applied to pulley on the pinion shaft, extended at one end, and supported by outboard bearing.

Regular construction is machine-cut gearing, iron plungers, cylinders and glands, rubber disc valves, sight feed oilers, but can supply with bronze plungers, bronze-lined glands at extra price, when so ordered.

The discharge pipe connection may be made at either end of the Pump. The suction pipe connection at either side of the Pump.

The suction pipe connection can be made at the opposite end from the discharge pipe, if so ordered.

Prices upon application.

FIG. 1227. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity, One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	For Elevations to	SIZES OF PIPE.		Geared.	Pulley.	Cipher.
Diameter.	Stroke.				Suction.	Discharge.			
$8\frac{1}{2}$ in.	12 in.	8.8 gals.	40 revs., 352 gals.	300 ft.	7 in.	6 in.	5.6 to 1	36 x 12 in.	Wellvet

For Power Table, see page 203.

Methods of driving from Electric Motors, etc., pages 200, 201.

GOULDS SINGLE-ACTING TRIPLEX POWER PUMP.

FOR ELEVATIONS TO 350 FEET, EQUIVALENT TO 150 POUNDS PRESSURE.

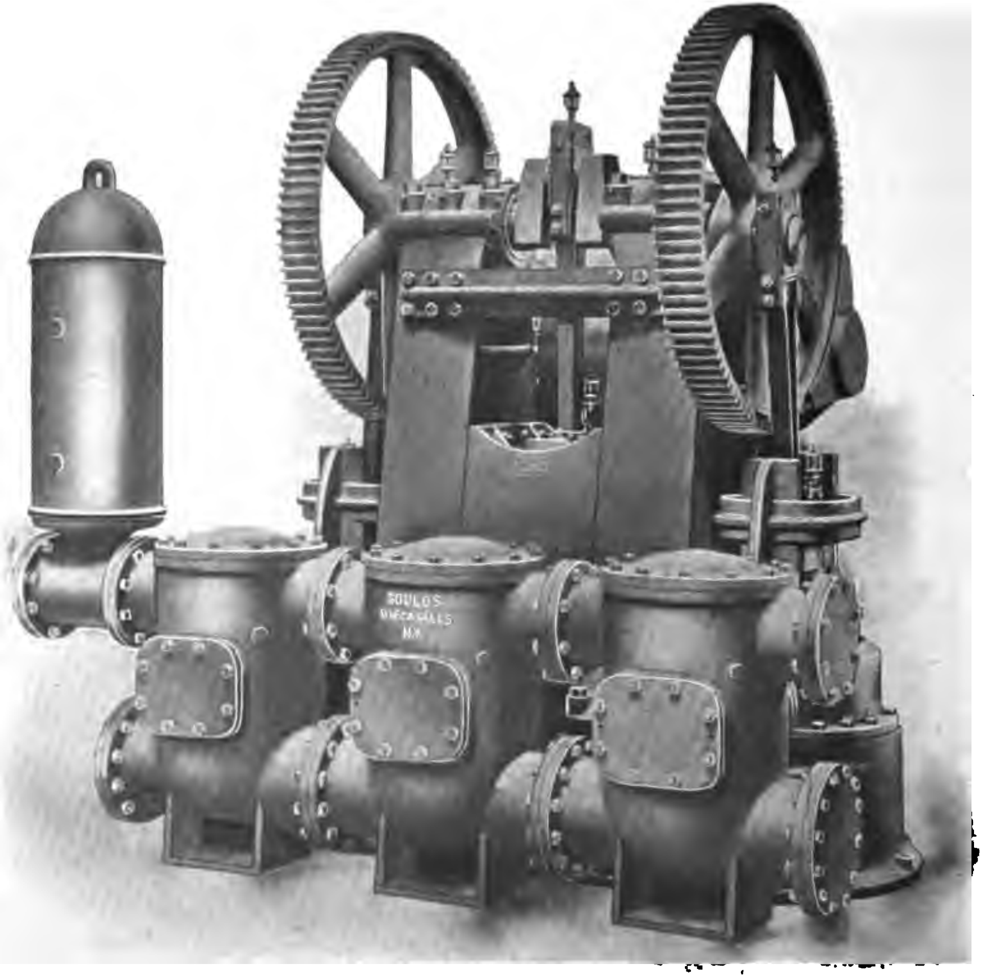


FIG. 920. SIZE 10" X 12"

GOULDS SINGLE-ACTING TRIPLEX POWER PUMP.

Fig. 920, Single-Acting Triplex Power Pump, is of the vertical type, and requires little floor space in proportion to its capacity. Power for driving is applied to pulley or gear on the pinion shaft, either centrally, between the housings, or this shaft is extended at either end. For electric or other high speed motive power, intermediate gearing and auxiliary shaft are used and can be supplied. See pages 200, 201.

The design and construction of this Pump embody all the features conducive to high efficiency, durability and strength. It has three single-acting plungers, outside packed and outside guided and connected. The crossheads have bronze shoes. Each connecting rod has strap-head with bronze box at crank and bronze bearing of the marine type at crosshead. The valve area is ample for fast running and large delivery. Each group of suction and discharge valves is conveniently accessible through hand-holes.

Regular construction is machine-cut gearing, iron plungers, cylinders and glands, rubber disc valves, sight feed oilers, but can supply with bronze plungers, bronze-lined glands at extra price, when so ordered.

As this Pump is applied to such a variety of work, we solicit the opportunity to send detailed information to intending purchasers. Prices upon application.

FIG. 920. SIZES, CAPACITIES, ETC.

No.	Plungers.		Capacity One Revolution of Crank Shaft.	†Usual Speed and Capacity per Minute.	For Elevations To	Sizes of Pipe.		Geared.	*Pulleys.	Cipher.
	Diameter.	Stroke.				Suction.	Discharge.			
A	6 in.	12 in.	4.4 gals.	40 revs., 176 gals.	750 ft.	6 in.	5 in.	5.6 to 1	30 x 12 in.	Wagael
B	7 "	12 "	6. "	40 " 240 "	500 "	6 "	5 "	5.6 to 1	30 x 12 "	Wagaft
C	8½ "	12 "	8.8 "	40 " 352 "	350 "	7 "	6 "	5.6 to 1	30 x 12 "	Clecob
D	5 "	12 "	3.06 "	40 " 122 "	1,500 "	5 "	4 "	5.6 to 1	32 x 12 "	Wagags
E	5½ "	12 "	3.7 "	40 " 148 "	1,300 "	5 "	4 "	5.6 to 1	32 x 12 "	Wagaho
F	6 "	12 "	4.4 "	40 " 176 "	1,000 "	6 "	5 "	5.6 to 1	32 x 12 "	Wagaic
G	7 "	12 "	6 "	40 " 240 "	800 "	6 "	5 "	5.6 to 1	32 x 12 "	Wagaju
H	8 "	12 "	7.8 "	40 " 312 "	600 "	7 "	6 "	5.6 to 1	32 x 12 "	Wageba
I	9 "	12 "	9.9 "	40 " 396 "	500 "	7 "	6 "	5.6 to 1	32 x 12 "	Wageck
J	10 "	12 "	12.2 "	40 " 488 "	350 "	8 "	7 "	5.6 to 1	32 x 12 "	Wooven
K	11 "	12 "	14.8 "	40 " 592 "	300 "	10 "	8 "	5.6 to 1	32 x 12 "	Clubka
L	12 "	12 "	17.6 "	40 " 704 "	250 "	10 "	8 "	5.6 to 1	32 x 12 "	Clubkih

*Largest pulley that can be placed between pinions and shaft. If speed conditions require larger pulley the pinion shaft may be extended and supported by outboard bearing. See pages 200, 201.

†Speed and capacity for boiler feeding, see page 185. For Power Tables see page 208.

GOULDS SINGLE-ACTING TRIPLEX

For Elevations to 350 Feet, Equivalent to 150 .

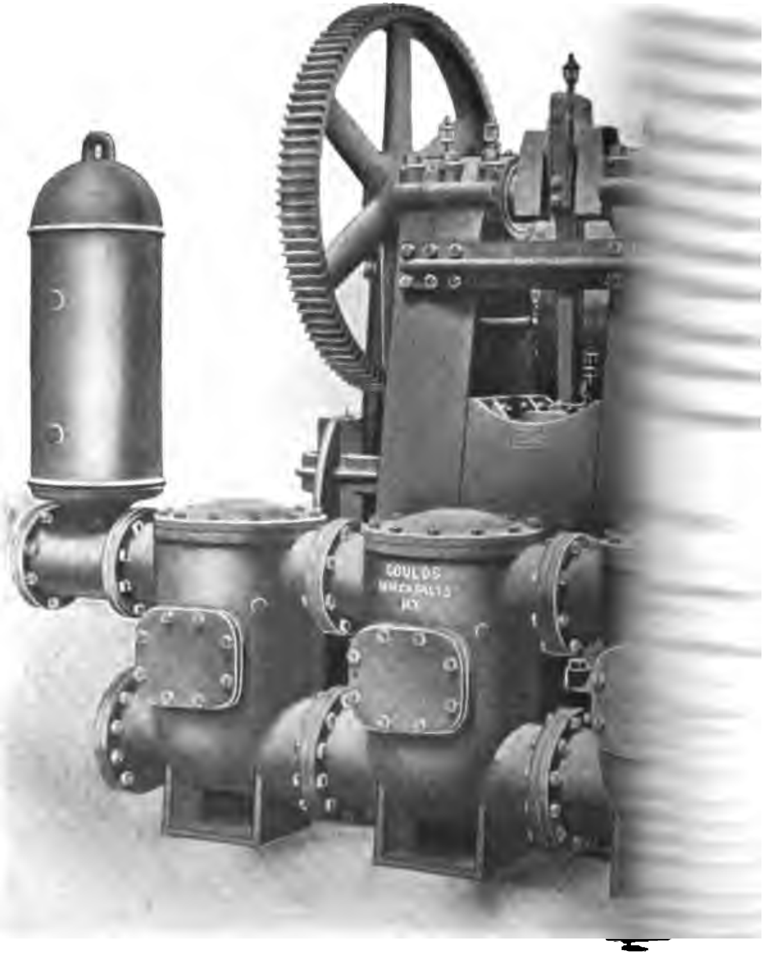


Fig. 920. Size 10" x 12"

GOULDS DOUBLE-ACTING TRIPLEX POWER PUMP.

FOR ELEVATIONS TO 350 FEET, EQUIVALENT TO 150 POUNDS PRESSURE.

Fig. 1095, Double-Acting Triplex Power Pump, is designed for water works, hydraulic elevator service, water supply for manufacturing purposes, etc.

It has three double-acting pistons, and, therefore, nearly twice the displacement of a single-acting Triplex Pump of the same diameter and stroke. It combines large capacity with minimum floor space.

In design, materials and workmanship, the Pump is of the highest grade. The valves and other working parts are liberally proportioned and easily accessible. It has adjustable bearings, crossheads and guides, double gearing, removable bronze cylinder linings, and packed pistons. Our standard arrangement is shown in the illustration. Smaller sizes vary somewhat in detail. Pipe connections may be made at either end of the Pump.

Power for driving is applied to pulley or gearing on the pinion shaft, either centrally, between the housings, or this shaft can be extended at either end to order. For electric or other high speed motive power, intermediate gearing and auxiliary shaft are used. See pages 200, 201 for these different methods of driving.

As this Pump is applied to such a variety of work, we solicit the opportunity to send detailed information to intending purchasers.

Prices upon application.

FIG 1095. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity per Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Geared.	* Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
3 in.	6 in.	1. gal.	60 revs., 60 gals.	2½ in.	2½ in.	6 to 1	15 x 4 in.	Waxips
4 "	6 "	1.9 "	60 " 114 "	2½ "	2½ "	6 to 1	15 x 4 "	Waxlqt
5 "	8 "	3.9 "	40 " 156 "	5 "	5 "	5.5 to 1	20 x 8 "	Waxlrf
6 "	8 "	5.6 "	40 " 224 "	6 "	6 "	5.5 to 1	22 x 10 "	Waxlx
7 "	8 "	7.7 "	40 " 308 "	6 "	6 "	5.5 to 1	22 x 10 "	Waxjak
7 "	10 "	9.8 "	40 " 392 "	7 "	6 "	5.3 to 1	26 x 10 "	Waxlob
8 "	10 "	12.7 "	40 " 508 "	8 "	7 "	5.3 to 1	26 x 10 "	Waxlwd
8 "	12 "	15.3 "	40 " 612 "	8 "	7 "	5.6 to 1	30 x 12 "	Waxish
9 "	12 "	19.4 "	40 " 776 "	8 "	7 "	5.6 to 1	30 x 12 "	Waxlto
10 "	12 "	23.8 "	40 " 952 "	10 "	8 "	5.7 to 1	32 x 18 "	Waxlun
11 "	14 "	33.6 "	40 " 1344 "	12 "	10 "	5.5 to 1	36 x 20 "	Waysvo
12 "	14 "	40.3 "	40 " 1610 "	12 "	10 "	5.5 to 1	36 x 20 "	Wayswd

* Largest pulley that can be placed between pinions and crank shaft. If speed conditions or power require larger pulley, the pinion shaft may be extended and supported by outboard bearing. See pages 200, 201.

For Power Table, see page 203.

GOULDS DOUBLE-ACTING TRIPLEX POWER PUMP.

FOR LIGHT SERVICE.

FOR ELEVATIONS TO 100 FEET, EQUIVALENT TO 43 POUNDS PRESSURE.

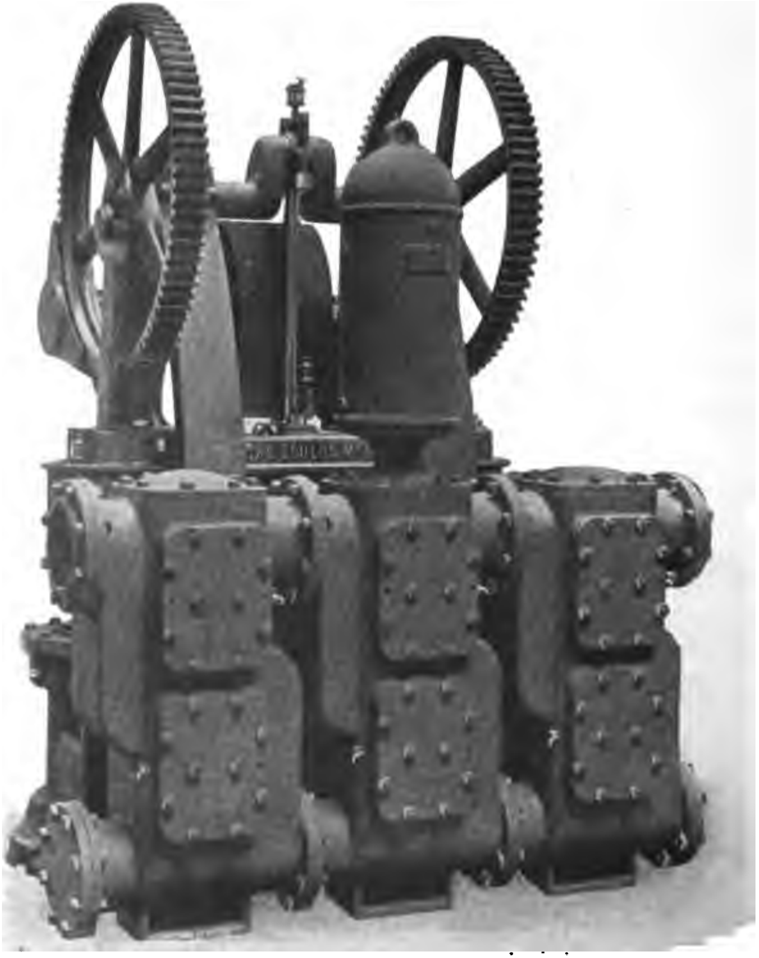


FIG. 1177. SIZE 9" X 12"

GOULDS DOUBLE-ACTING TRIPLEX POWER PUMP.

FOR ELEVATIONS TO 100 FEET, EQUIVALENT TO 43 POUNDS PRESSURE.

Fig. 1177, Vertical Triplex Type, has double-acting pistons. Valve chests are on one side of the Pump, and each chest contains two sets of suction and discharge valves. Base casting forms a substantial foundation for working parts of Pump. Power for driving is applied to pulley on the pinion shaft, either centrally between the main bearings, or, when so specified, this shaft is extended beyond the bearing at either end of the Pump and an outboard bearing provided. For electric or other high speed motive power intermediate gearing and auxiliary shaft are used. See pages 200 and 201 for these different methods of driving. The double gearing is machine cut; steel crank shaft carrying a gear at each end beyond the bearing. Connecting rods are of the marine type, made from forged steel and finished all over. Crossheads have bronze shoes and adjustable for taking up wear. Cylinders have removable bronze linings. Pistons are made with followers and fitted with fibrous packing. Pipe connections are at both ends of the Pump for connection to suction and discharge pipes as most convenient. All bearings provided with glass oil cups. Our illustration shows our standard construction. Prices upon application.

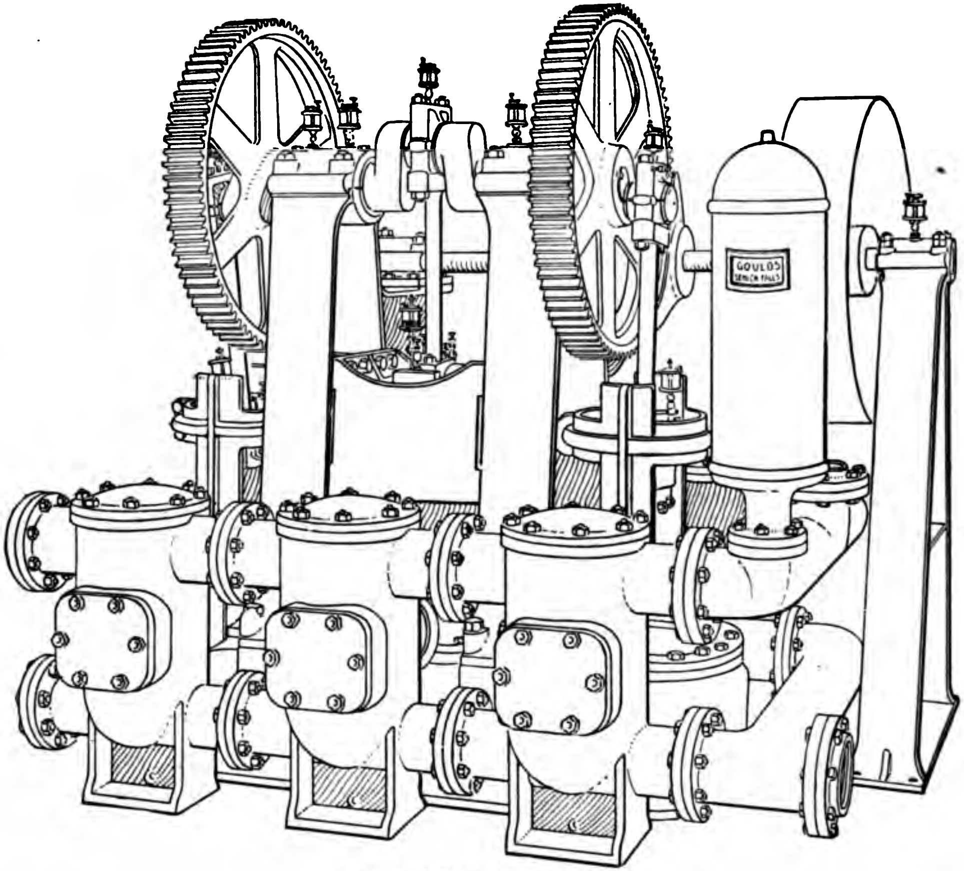
FIG. 1177. SIZES, CAPACITIES, ETC.

PISTONS.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Geared.	Single Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
7 in.	8 in.	7.7 gals.	40 revs., 308 gals.	7 in.	6 in.	5.6 to 1	18 x 8 in.	Repepr
8 "	10 "	12.7 "	40 " 508 "	8 "	7 "	5 to 1	30 x 7½ "	Weaknit
9 "	12 "	19.4 "	40 " 776 "	8 "	8 "	5.7 to 1	30 x 8 "	Weaknop
11 "	12 "	29.1 "	40 " 1164 "	10 "	10 "	5.3 to 1	30 x 8½ "	Weaknug
12 "	14 "	40.5 "	40 " 1620 "	12 "	10 "	5.6 to 1	30 x 12 "	Weakof

For Power Table, see page 203.

Methods of driving from Electric Motors, etc., pages 200, 201.

DRIVING CONNECTIONS FOR TRIPLEX POWER PUMPS.



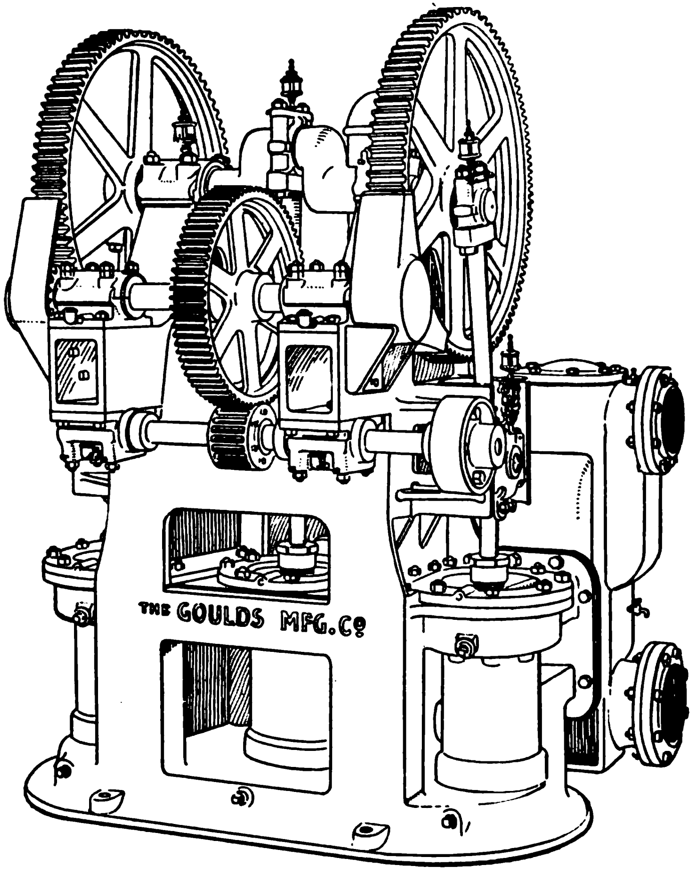
FORM "E" (Cipher, **Form E.**)

Outline engraving represents one of our Double-Acting Triplex Power Pumps with extended pinion shaft, supported by outboard bearing and carrying driving pulley for belt, where speed connections require larger diameter than can be placed between bearings back of Pump. Always specify dimensions and speed of motor pulley and required number of gallons per minute. Can be applied to any of the following Triplex Power Pumps:

Fig. 1227.	**Single-Acting Triplex Pump......**	**page 193**	**Fig. 1095.**	**Double-Acting Triplex Pump......**	**page 197**
Fig. 920.	**Single-Acting Triplex Pump......**	**" 195**	**Fig. 1177.**	**Double-Acting Triplex Pump .....**	**" 199**

Prices upon application.

In telegraphing, place cipher, representing desired Form, immediately after cipher standing for type and size Pump selected.



FORM "I" (Cipher, Form I.)

Outline engraving shows one of our Double-Acting Triplex Power Pumps, with auxiliary shaft, gearing and coupling for connection to electric or other high-speed motor. Always specify speed of motor shaft and required number of gallons per minute. Can be applied to any of the following Triplex Power Pumps:

Fig. 1227, Single-Acting Triplex Pump .... **page 193**
Fig. 920, Single-Acting Triplex Pump .... **page 195**
Fig. 1095, Double-Acting Triplex Pump .... **page 197**
Fig. 1177, Double-Acting Triplex Pump .... **page 199**

Prices upon application. In telegraphing, place cipher, representing desired Form, immediately after cipher standing for type and size Pump selected.

STRAINERS, FOOT VALVES, CHECK VALVES, FITTINGS.

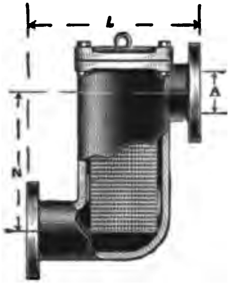


FIG. 964

Fig. 964, Suction Pipe Strainer, protects the Pump from foreign matter which might enter valves. It is made with a wire basket, which is easily removed for cleaning.

FIG. 964 SIZES, PRICES, ETC.

Size, inches	*¾	*1	*1¼	*1½	2	2½	3
Price.	$2.25	2.50	3.00	4.00	6.00	8.00	12.00

* Screwed ends.

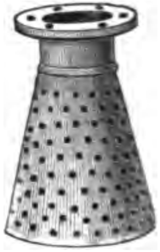
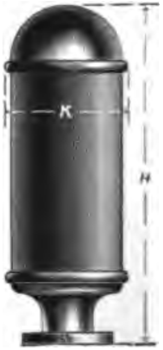


FIG. 36

FIG. 36. WROUGHT-IRON STRAINER.

Dia. Suction Pipe...	3	4	5	6	7	8	9	10	12
Flange Joint...............	$4.25	6.65	8.00	9.75	11.45	14.90	20.60	23.00	28.60



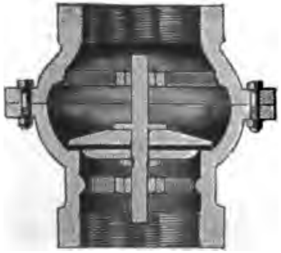
PRESSURE AND VACUUM CHAMBERS.

A—Diameter Flange, in...........	7	7	9	9	11¼
K—Diameter Chamber, in........	10	10½	13½	14¾	17½
H—Height, in........................	32	35	35	48½	47½
Price..	$7.50	9.00	16.00	30.00	40.00

VERTICAL CHECK VALVES.

Iron body with bronze mountings. Gates rubber faced. Tested at 300 pounds water pressure per square inch. Test guaranteed.

Size, inches......	2	2½	3	4	5	6	7	8	10	12
Screwed Ends.....	$7.50	8.00	12.70	16.50	22.50	29.00	32.50	37.00	92.50	123.00
Flanged Ends.....	$8.00	8.50	12.70	16.50	22.00	28.00	31.50	36.50	92.50	123.00
Hub or Bell Ends	$8.00	8.50	12.70	16.50	22.00	30.00	35.00	39.00	94.50	125.00



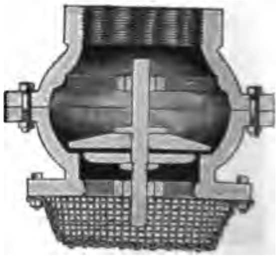
VERTICAL CHECK VALVES

8-inch and under have single valve. Larger sizes have nest of valves.

VERTICAL FOOT VALVES.

Iron body with bronze mountings. Gates rubber faced. Copper screen. Tested at 200 pounds water pressure per square inch. Test guaranteed.

Sizes, inches...	2	2½	3	4	5	6	7	8	10	12
Screwed Ends ...	$11.50	12.00	16.25	20.00	26.25	33.00	38.50	44.75	82.00	113.00
Flanged Ends.....	$11.75	12.25	16.25	20.00	25.75	32.50	38.00	43.50	82.00	112.00
Hub or Bell Ends	....	....	....	....	....	33.25	39.00	46.50	83.00	113.00
If without Screen deduct from list	....	....	....	4.50	5.25	6.25	7.00	8.00	7.00	10.00



VERTICAL FOOT VALVES

8-inch and under have single valve and copper basket screen. Larger sizes have nest of valves and copper plate screen.

For other fittings, supplies, etc., see pages
72—Foot Valves, Suction Pipe Strainers, etc.
293—Pulleys, Cut-off Couplings, etc.
299—Wrought-Iron Pipe and Fittings.
295—Spiral Riveted Pipe and Fittings.
294—Cast-iron Pipe and Fittings.
296, 297—Water Relief Valves, Gauges, Rev. Counters, etc.
298—Gate Valves, Check Valves, etc.

TABLE OF POWER REQUIRED TO OPERATE GOULDS TRIPLEX POWER PUMPS.

The estimates given in the table are made with a liberal allowance of power. The power for other capacities and heights is, approximately, in proportion to that tabulated. Closer estimates will be given upon application. By "head" is meant the vertical distance from surface of water supply to point of delivery. One foot head is equivalent to .43 pounds pressure. The head is increased by the friction of the water in the pipes and elbows.

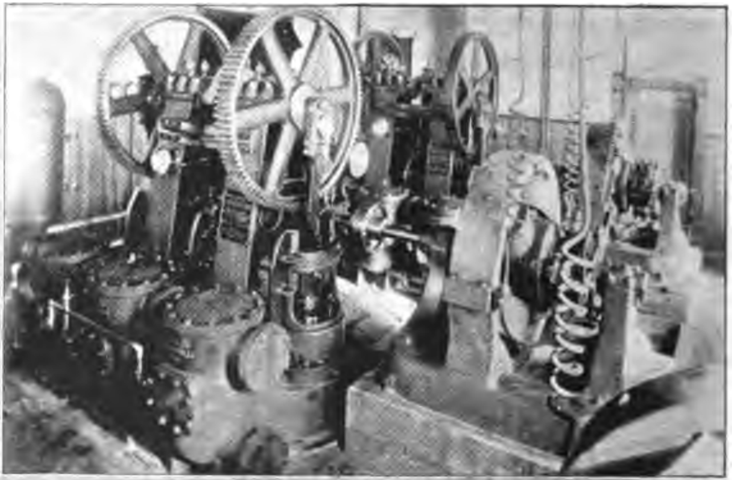
GENERAL SERVICE PUMPS.

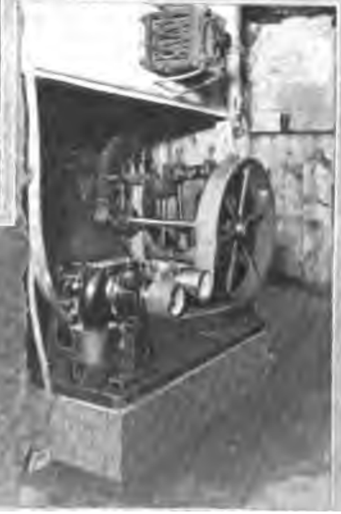
	Diameter and Stroke of Pump.	Capacity at 40 Revs. per Min. of Crank Shaft.	100 Feet Head or 43 Pounds Pressure.	200 Feet Head or 87 Pounds Pressure.	300 Feet Head or 130 Pounds Pressure.
Single Acting	1¼ x 2 in.	1 gals.	.24 H. P.	.32 H. P.	.40 H. P.
	1¾ x 2½ "	3 "	.35 "	.50 "	.65 "
	2 x 3 "	5 "	.50 "	.80 "	1. "
	2½ x 4 "	10 "	.85 "	1.25 "	1.7 "
	3 x 4 "	14 "	.90 "	1.6 "	2.25 "
	3½ x 4 "	20 "	1.11 "	1.81 "	2.5 "
	4 x 4 "	26 "	1.25 "	2. "	3. "
	4 x 6 "	40 "	2. "	3. "	4.5 "
	5 x 6 "	60 "	3. "	4.5 "	6. "
	5 x 8 "	80 "	4. "	5.5 "	8.25 "
	6 x 8 "	117 "	4.8 "	7.8 "	11.7 "
	6½ x 8 "	136 "	5.5 "	9. "	13.5 "
	7 x 8 "	160 "	6.1 "	10.7 "	16. "
	7 x 10 "	200 "	7.5 "	13. "	20. "
	8 x 8 "	208 "	8. "	13 5 "	21. "
	8 x 10 "	260 "	10.5 "	18.25 "	26. "
	8 x 12 "	312 "	12.0 "	22. "	30. "
	9 x 10 "	328 "	12.5 "	23. "	31.5 "
	8½ x 12 "	352 "	14.5 "	23.5 "	33. "
	10 x 12 "	488 "	19. "	33. "	46. "
	11 x 12 "	592 "	23. "	40.5 "	56. "
	12 x 12 "	704 "	28. "	47.5 "	68. "
Double Acting	5 x 8 "	156 "	6.5 "	10.4 "	14.6 "
	6 x 8 "	224 "	9. "	15. "	21. "
	7 x 8 "	308 "	11.8 "	20.5 "	28.8 "
	7 x 10 "	392 "	15. "	26.1 "	36.7 "
	8 x 10 "	508 "	19.5 "	34.1 "	47.6 "
	8 x 12 "	612 "	24. "	41.6 "	58.5 "
	9 x 12 "	776 "	29.8 "	51.7 "	72.7 "
	10 x 12 "	952 "	36.6 "	63.4	89.2 "
	11 x 12 "	1164 "	44.7 "	77.6 "	109.1 "
	11 x 14 "	1344 "	51.7 "	89.6 "	126. "
	12 x 14 "	1610 "	61.8 "	107.2 "	150.7 "

HIGH SERVICE PRESSURE PUMPS.

	Diameter and Stroke of Pump.	Capacity at 40 Revs. per Min. of Crank Shaft.	400 Feet Head of 173 Pounds Pressure.	600 Feet Head or 260 Pounds Pressure.	900 Feet Head or 300 Pounds Pressure.
Single Acting	5 x 6 in.	61 gals.	8.1 H. P.		
	4½ x 8 "	66 "	10.1 "	13.7 H. P.	18.5 H. P.
	5½ x 8 "	98 "	15. "	20.4 "	27.6 "
	6 x 8 "	116 "	16.6 "	23.2 "	
	6½ x 8 "	136 "	19.4 "	27.2 "	
	7 x 8 "	160 "	21.3 "		
	5 x 12 "	122 "	20.3 "	28.1 "	38.1 "
	5½ x 12 "	148 "	22.8 "	32.6 "	46.2 "
	6 x 12 "	176 "	25.8 "	36.6 "	52.8 "
	7 x 12 "	240 "	33.3 "	46. "	
	8 x 12 "	312 "	43.3 "	58.5 "	
	9 x 12 "	396 "	52.8 "		
Double Acting	5¼ x 16 "	360 "	55.3 "	77.1 "	110.9 "
	5¾ x 16 "	432 "	66.4 "	92.5 "	130. "
	6½ x 16 "	552 "	78.8 "	113.4 "	155.2 "
	7½ x 16 "	720 "	100. "	144. "	
	8½ x 16 "	940 "	125.3 "		

TRIPLEX ELECTRIC POWER PUMPS.





Triplex Electric Power Pumps are largely used in dwellings, hotels, etc., to afford an independent supply of soft water; also for operating hydraulic elevators, etc. They are free from odor, dust or ashes; give out no heat and afford no chance of explosion. Automatic controls provided for special service. The larger forms of these Pumps offer many advantages for service in mills, factories, for water works, etc. The subject is one of detail and will be treated upon application.

See pages 205 to 213.

GOULDS TRIPLEX ELECTRIC HOUSE PUMP.

WITH BELT CONNECTION BETWEEN PUMP AND MOTOR

Fig. 1220 represents our Complete Triplex Electric House Pump, including both Pump and Motor, mounted on iron bed plate and connected by belt running over idler. It runs smoothly and noiselessly, is of neat, compact design, simple and easy to take care of, and, where electric current is available, completely solves the problem of water supply.

Largely used in New York City when pressure of city water is insufficient to reach upper floors. Rendered entirely automatic by use of switch, which cuts out or throws in the electric current as water in tank rises or falls. Either an open tank in upper part of the building or a compression tank in the basement can be used. Our prices are for complete outfit, as shown in cut, motor included.

We will furnish without motor, also without bed plate, if so desired.

Automatic switches furnished at moderate prices.

Prices upon application.

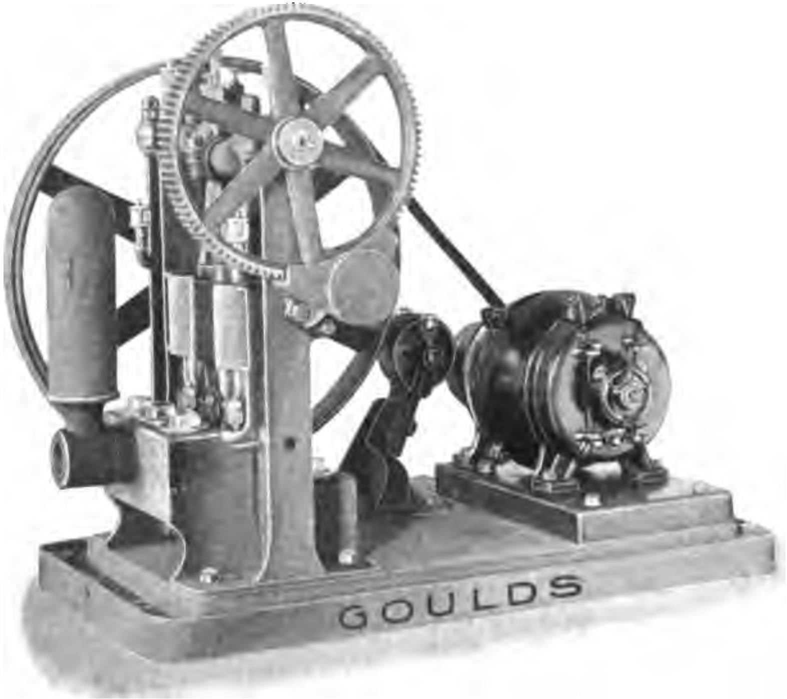
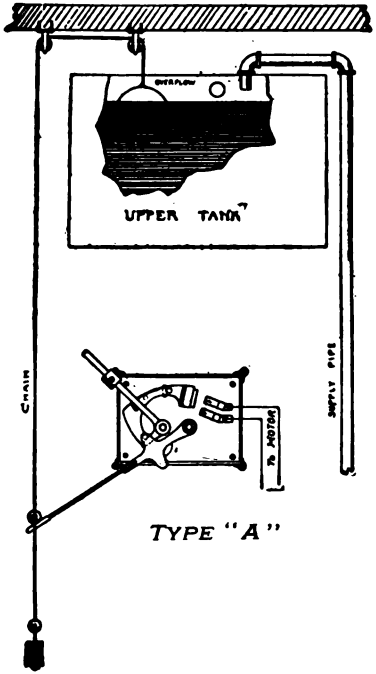


FIG. 1220. SIZE 2" X 3"

FIG. 1220. SIZES, CAPACITIES, ETC.

Plunger.		Capacity per Hour.	Sizes of Pipe.		For Elevations up to 100 Feet.		For Elevations from 100 to 200 Feet.	
Diameter.	Stroke.		Suction.	Discharge	Size of Motor.	Cipher.	Size of Motor.	Cipher.
1¾ in.	2½ in.	200 gals.	1 in.	1 in.	½ H. P.	Painger	½ H. P.	Painheg
2 "	3 "	350 "	1¼ "	1¼ "	½ "	Paingib	1 "	Painhit
2½ "	4 "	600 "	1½ "	1½ "	1 "	Paingor	1 "	Painita
3½ "	4 "	1200 "	2 "	2 "	1 "	Paingul	2 "	Painivo



TYPE "A"

Type "A," illustrated, single pole, maximum volts, 300; maximum amperes, 20; low tension, direct current, automatic switch, adapted for starting series wound motors of one horse-power or less.

Type "B," not illustrated, same as Type "A," only double pole. Can also be used with small, alternating, polyphase motors of not over five horse-power and not over 300 volts.

Type "C," not illustrated, double pole, maximum volts, 600; maximum amperes, 15. Can be used for small, series, direct current motors of 600 volts or less, and of not over one horse-power. Can also be used with polyphase, alternating current motors of not over five horse-power and not over 600 volts.

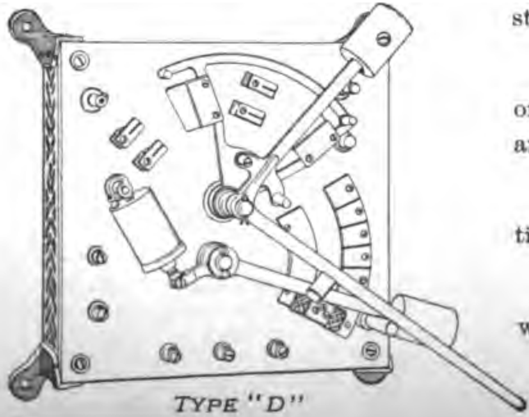
Type "D," illustrated, automatic, double pole, automatic motor starter, with magnetic release, designed for direct current, shunt, series or compound wound motors of one-half to 25 horse-power.

Alternating current, polyphase motors of over five horse-power require starters of special designs, which vary according to conditions.

In writing always give size of motor and whether shunt, series or compound. For series or compound wound motors state resistance of series coil.

Prices on automatic switches and motor starters upon application.

Floats, chain, pulleys, etc., are not included and only furnished when ordered and at extra price.



TYPE "D"

GOULDS AUTOMATIC REGULATOR AND BY-PASS.

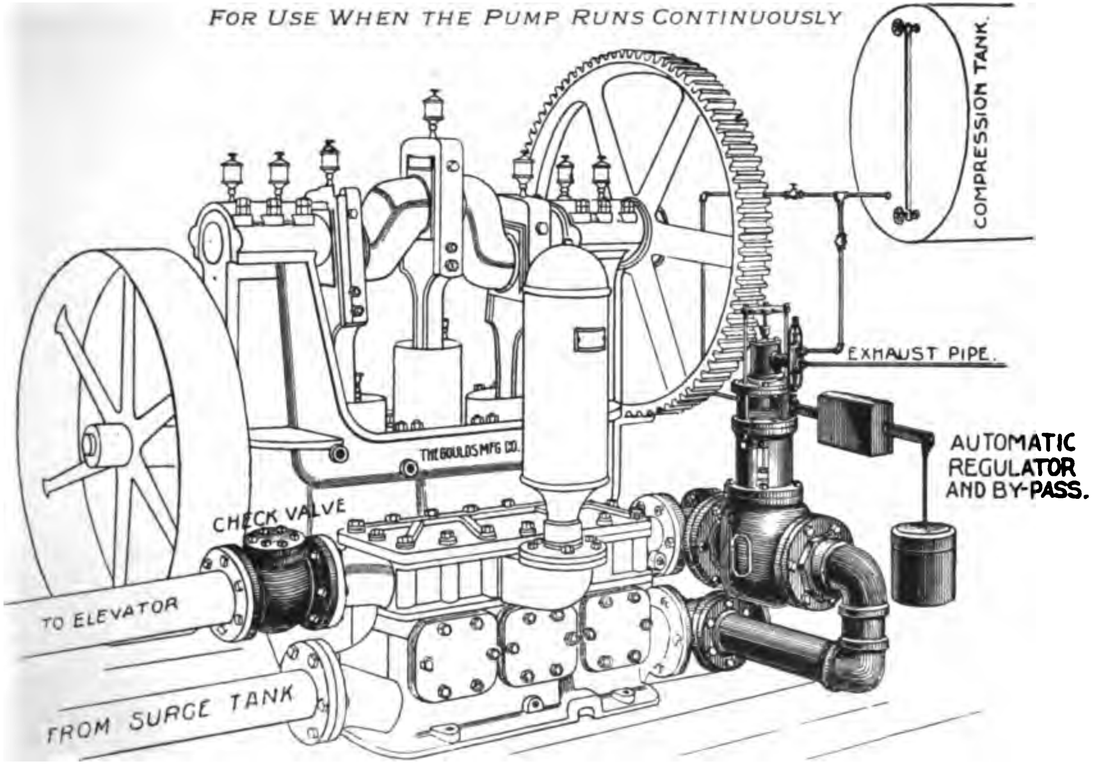


PLATE "F"

Plate "F," shows Automatic Regulator and By-Pass attached to the Pump in the usual manner. The discharge pressure on the Pump is controlled by the pressure in the compression tank. The regulator is adjusted to open the By-Pass Valve, whenever the limit pressure is reached, and the By-Pass is kept open, until the pressure begins to drop, as the elevator is started. The By-Pass then closes and the Pump discharges into the tank, until the limit pressure is again reached.

Prices will be quoted for the parts shown in full-line engraving.

GOULDS AUTOMATIC REGULATOR AND BY-PASS FOR ELEVATOR PUMPS.

To be used with Single-Acting Pumps.	Valves and Connections.	Cipher.	To be used with Double-Acting Pumps.	Valves and Connections	Cipher.
5 x 6 and 5 x 8	**1½ in.**	**Goldjag**			
6 x 8 and 6½ x 8	**2 "**	**Goldjom**	**7 x 8 and 7 x 10**	**3 in.**	**Goldkof**
7 x 8, 8 x 8 and 8 x 10	**2½ "**	**Goldjust**	**8 x 10, 8 x 12, 9 x 12 and 10 x 12**	**4 "**	**Goldkur**
9 x 10 and 8½ x 12	**3 "**	**Goldkam**	**11 x 14 and 12 x 14**	**5 "**	**Goldkys**
10 x 12, 11 x 12 and 12 x 12	**4 "**	**Goldkil**			

GOULDS HORIZONTAL TRIPLEX MINE PUMP.

FOR HEAVY PRESSURE.

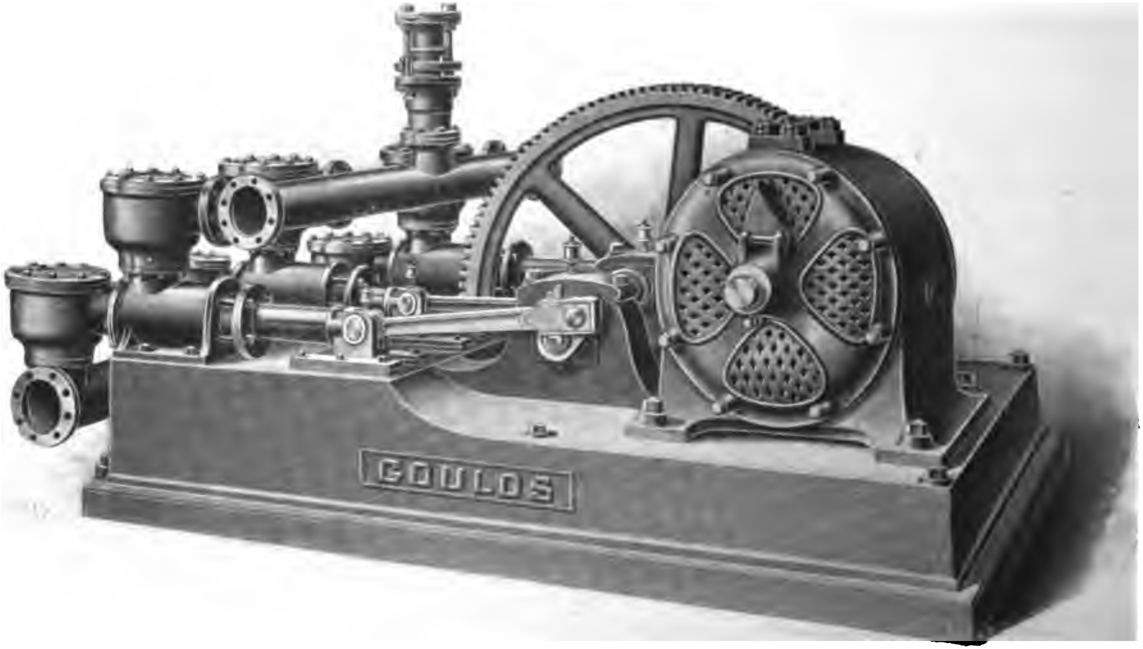


FIG. 1218. SIZE 7" x 8"

GOULDS HORIZONTAL TRIPLEX MINE PUMP.

FOR HEAVY PRESSURE.

Fig. 1218, Horizontal Single-Acting Triplex Mine Pump, is especially adapted for mine work, there being no piece in the Pump but that can be lowered into a mine shaft 3½ feet x 6 feet.

It has single-acting plungers, outside guided and outside packed. The crank shaft is of steel, the gear is made in halves and has machine cut teeth. Power is transmitted directly from pinion on the motor shaft to the gear on the crank shaft, consequently speed of motor must not exceed 400 revolutions per minute. Bed plate is extended for motor.

Suction and discharge headers are arranged to allow piping from either side. The valves are conveniently located in separate chambers and are easily accessible. A spring alleviator is used, instead of the usual form of air chamber.

The regular construction is with iron plungers, cylinders and glands. These parts can be furnished: plungers of bronze, glands and cylinders bronze lined, at extra price, when so ordered.

Prices upon application.

FIG. 1218. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	For Elevations to	Sizes of Pipe.		Geared.	Cipher.
Diameter.	Stroke.				Suction.	Discharge.		
5½ in.	8 in.	2.46 gals.	50 revs., 123 gals.	880 ft.	5 in.	4 in.	8 to 1	Roatimo
6 "	8 "	2.9 "	50 " 145 "	750 "	5 "	4 "	8 to 1	Roatinu
6½ "	8 "	3.4 "	50 " 170 "	640 "	6 "	5 "	8 to 1	Roatiob
7 "	8 "	4. "	50 " 200 "	550 "	6 "	5 "	8 to 1	Roatius

For Power Tables see page 203.

HORIZONTAL DOUBLE-ACTING TRIPLEX MINE PUMP.

FOR HEAVY PRESSURE.

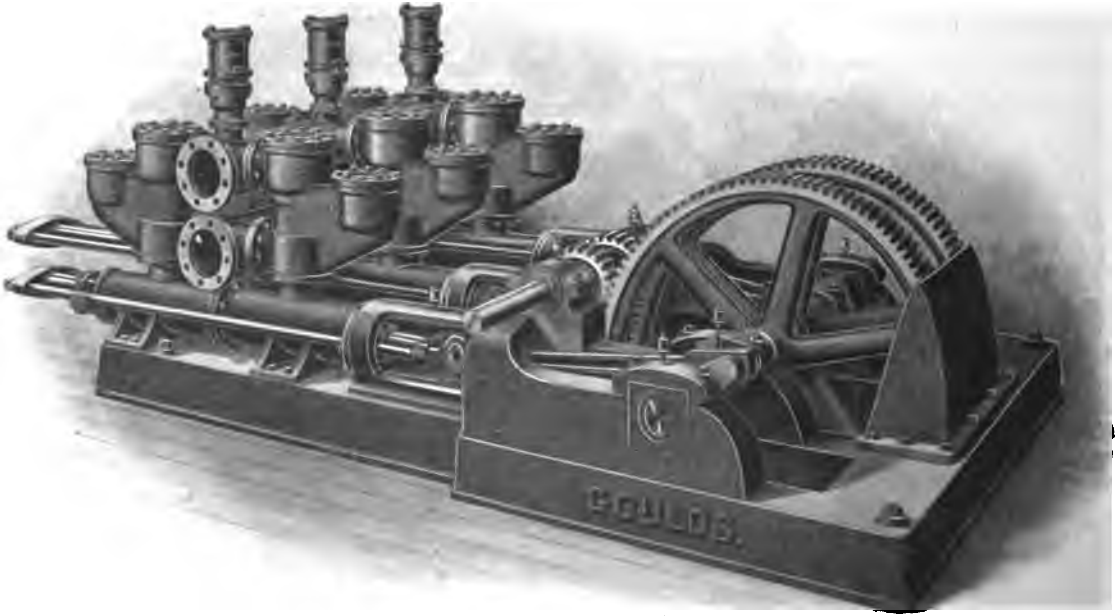


FIG. 1221. SIZE 5¾" x 16"

GOULDS HORIZONTAL DOUBLE-ACTING MINE PUMP.

FOR HEAVY PRESSURE.

Fig. 1221, Horizontal Double-Acting Triplex Power Pump, illustrated on opposite page, has capacity ranging from 940 to 360 gallons per minute against elevations from 500 to 1400 feet, equivalent to from 216 to 600 pounds pressure. Power for driving may be applied at either side. For electric or other high-speed motor power, intermediate gearing and auxiliary shaft are used and can be supplied at extra price.

It is double-acting, each plunger being outside-packed and the two plungers for each cylinder connected by outside rods. Crank shaft is of steel and driven by double gears and pinions with machine-cut teeth. All bearings are large and adjustable for wear.

Suction and discharge valves are located in separate chambers or boxes and can be readily examined. The suction and discharge pipes can be connected at either side of the Pump. A spring alleviator is provided for equalizing the flow and taking any shock which may occur.

For Mine Pump or other service, where economy in installation and maintenance is desired, this Pump is especially recommended.

The regular construction is with iron plungers, cylinders and glands, but these parts can be furnished; plungers of bronze, glands and cylinders bronze-lined, at extra price, when so ordered.

Prices upon application.

FIG. 1221. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	For Elevations to	Sizes of Pipe.		Geared.	Cipher.
Diameter.	Stroke.				Suction.	Discharge.		
5¼ in.	16 in.	9. gals.	40 revs., 360 gals.	1400 ft.	7 in.	6 in.	6 to 1	Roative
5¾ "	16 "	10.8 "	40 " 432 "	1150 "	8 "	7 "	6 to 1	Rusebb
6½ "	16 "	13.8 "	40 " 552 "	900 "	8 "	7 "	6 to 1	Ruseck
7½ "	16 "	18. "	40 " 720 "	700 "	10 "	8 "	6 to 1	Rusedr
8½ "	16 "	23.5 "	40 " 940 "	500 "	12 "	10 "	6 to 1	Rusedsa

For Power Table, see page 203.

GOULDS HORIZONTAL TRIPLEX ELECTRIC MINE PUMP.

FOR ELEVATIONS TO 300 FEET, EQUIVALENT TO 130 POUNDS PRESSURE.

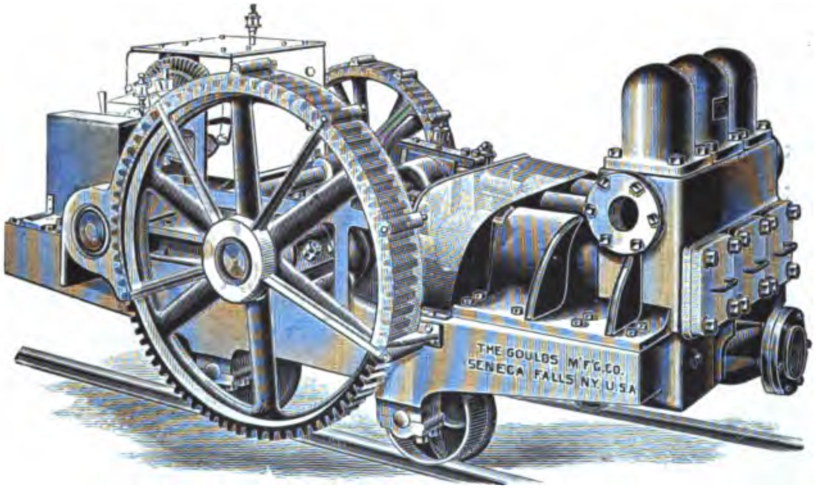

THE GOULDS M'F'G. CO.
SENECA FALLS N.Y. U.S.A.

FIG. 966. SIZE 6½" X 8"

Fig. 966 is the original and approved Horizontal, Electric Mine Pump. Our experience in mine Pumping has enabled us to embody all the essentials in this Pump which insure convenience, reliability and compactness.

It is mounted on an iron truck, which cannot be affected by moisture and which always maintains the accurate alignment of the Pump and Motor, insuring easy running and exceptional durability.

A distinctive feature of our Mine Pumps appears from the fact that they do not require an attendant, because they cannot "run away" when the water is pumped out. Occasional oiling is all that is necessary.

The materials, construction and workmanship are of the best, the gearing is machine-cut, the bearings are of bronze or babbitt and adjustable or easily renewed, the valves are quickly accessible.

Our regular construction is: Phosphor bronze plungers, lined cylinders and glands; but can supply, when so ordered, with iron working parts at some saving in cost. Price includes the Pump complete, the iron truck with wheels, the gearing necessary to connect the Motor, but it does not include the Motor. We are prepared to furnish Motors of any make and type at current prices.

Correspondents should advise us of the width of the track, height of roof, also furnish working drawing of Motor and advise speed and gallons to be pumped per minute.

Prices upon application.

FIG. 966. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	SIZES OF PIPE.		Crank and Pinion Shafts Geared.	Cipher. Bronze Fitted.	Cipher. Iron.
Diameter.	Stroke.			Suction.	Discharge.			
5 in.	8 in.	2.0 gals.	40 revs., 80 gals.	3 in.	3 in.	5 to 1	Briefer	Blunder
6½ "	8 "	3 4 "	40 " 136 "	4 "	4 "	5 to 1	Baldest	Blunderbus
8 "	8 "	5.2 "	40 " 208 "	5 "	4 "	5 to 1	Brimful	Blundering

For Power Table, see page 203.

FOR ELEVATIONS TO 300 FEET, EQUIVALENT TO 130 POUNDS PRESSURE.

Fig. 1237, Electric Mine Sinking Pump, is compact in form and not liable to damage from moisture or hard usage A special type of water-proof motor is used, which is enclosed in tight casing and will work as well under water as out and cannot be "drowned" by a sudden inrush of water in the mine. The Pump is of the duplex double-acting type, with outside packed plungers. Although the working parts are almost entirely concealed, they are readily accessible for examination or repairs.

The sizes, given in the following table, may be modified as desired for special capacities or greater lifts.

Prices on Pumps and Motors upon application.

FIG. 1237. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Rev. of Crank Shaft.	Capacity per Minute at Ordinary Speed.	SIZES OF PIPE.		Size Motor Required.	Dimensions Over All.	Cipher.
Dia.	Stroke			Suc.	Dis.			
4½ in.	6 in.	1.6 gals.	96 gals.	4 in.	3 in.	15 H. P.	30 x 40 x 108 ins.	Ruseegs
6 "	6 "	2.9 "	174 "	5 "	4 "	25 "	34 x 45 x 114 "	Rusechl

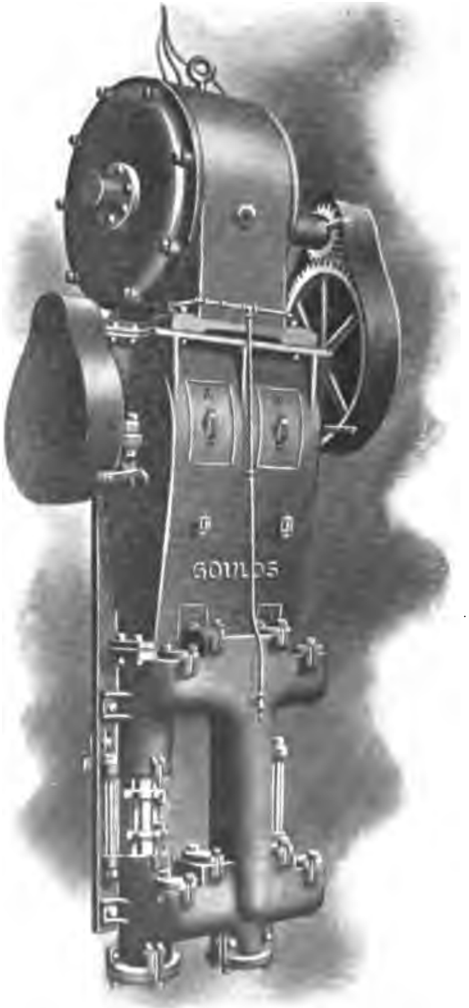
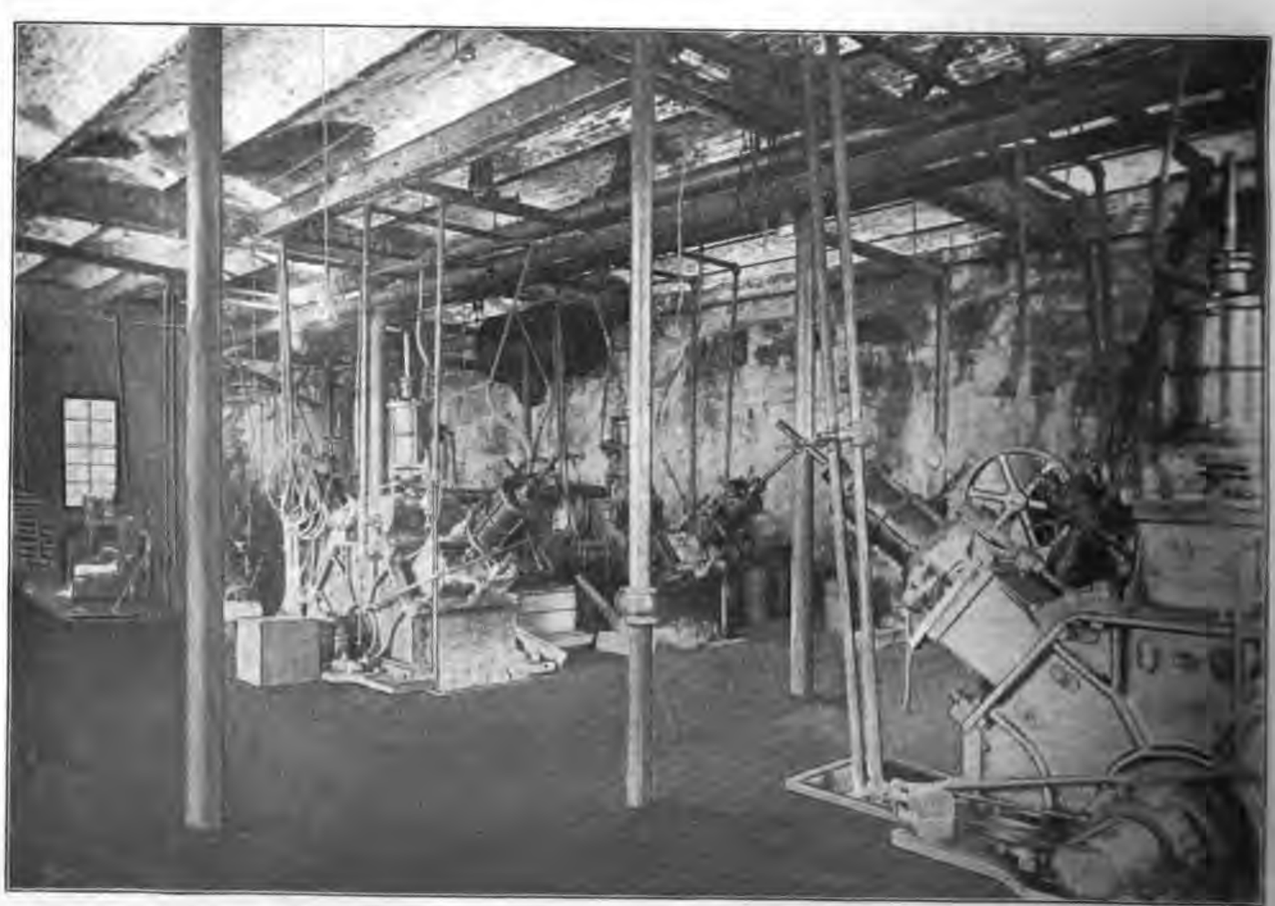


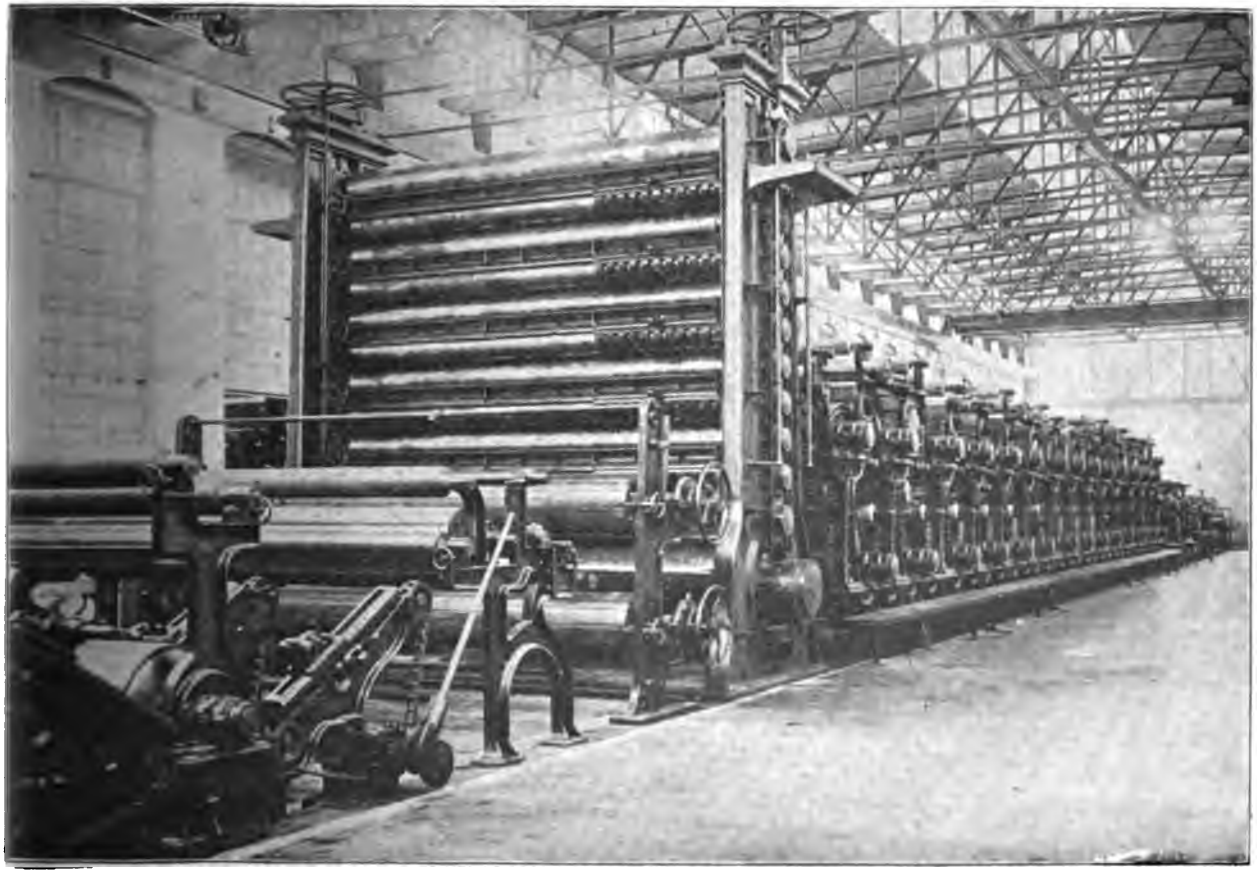
FIG. 1237. SIZE 4½" x 6"

GOULDS TRIPLEX POWER PUMPS IN PULP MILLS.



Engraving shows Hydraulic Grinders in Pulp Mill.

Goulds Triplex Pumps are used for maintaining pressure on these grinders; see following pages.



Engraving shows the widest Fourdrinier in the World—162 inches. The stuff for this machine is pumped by a Goulds Triplex Stuff Pump, size 10″ x 10″.

See following pages.

GOULDS TRIPLEX POWER SUCTION PUMP.

FOR PAPER MACHINE SUCTION BOXES.

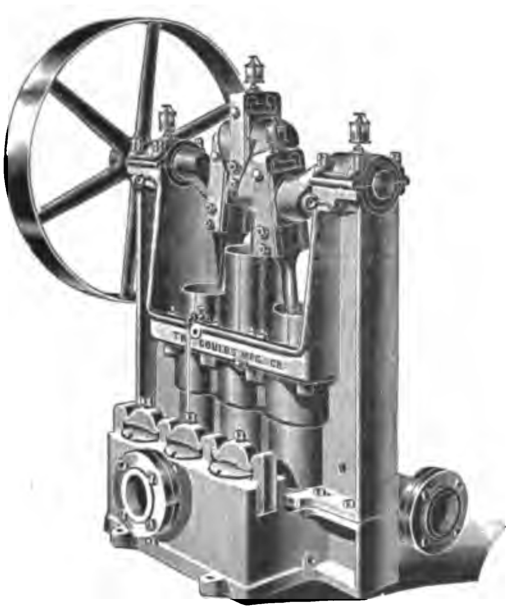

GOULDS MFG. CO.

FIG. 947. SIZE 7" X 8"

Fig. 947, Triplex Suction Pump, is of the vertical type and has three single-acting bronze plungers, operated by three-throw crank shaft. The cylinders and glands are bronze-lined. Water seal around the plungers, which admits of loosely adjusted packing, and insures great durability and easy running. Large valve area; all valves quickly accessible. Crank shaft complete in one piece and runs in babbitted bearings. The connecting rods have bronze bushed bearings in plungers and strap head crank bearings with phosphor-bronze boxes. Sight-feed oilers. Suction connection at either end of the Pump; discharge on the other side. Pump may be placed in any position relative to the paper machine.

When inquiring about Suction Pumps please state width of paper machine, number of suction boxes, range of speeds, kind of stock used, weight of paper made, general working conditions.

Prices upon application.

FIG. 947. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	Speed of Crank Shaft per Minute.	Suction.	Discharge.	Pulley.	Cipher.
Diameter.	Stroke.						
7 in.	8 in.	4 gals.	40 to 60 revs.	4 in. pipe	4 in. pipe	36 x 6 in.	Wraith
8 "	10 "	6.5 "	40 to 60 "	6 "	5 "	48 x 8 "	Repelled
8 "	12 "	7.8 "	40 to 60 "	6 "	5 "	48 x 8 "	Repelling

GOULDS TRIPLEX POWER SUCTION PUMP.

FOR PAPER MACHINE SUCTION BOXES.

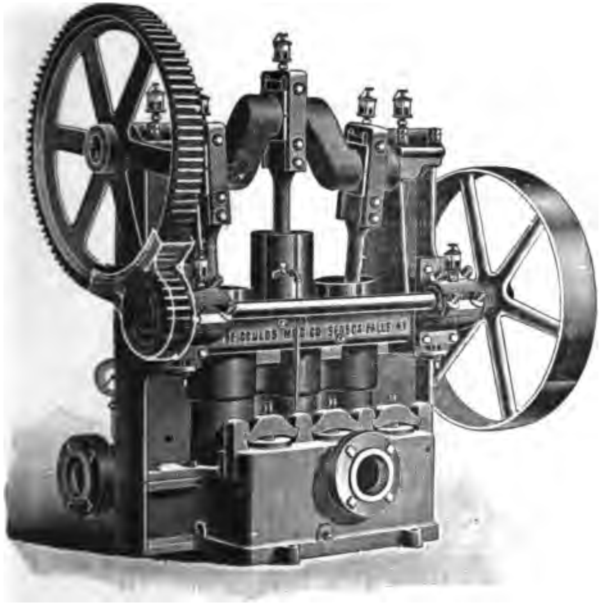


FIG. 956. SIZE 7" X 8"

Fig. 956, Triplex Suction Pump, is of the vertical type, and has three single-acting bronze plungers, operated by three-throw crank shaft. The cylinders and glands are bronze-lined. Water seal around the plungers, which admits of loosely adjusted packing, and insures great durability and easy running. Large valve area; all valves quickly accessible. Crank shaft complete in one piece and runs in babbitted bearings. Machine-cut gearing. The connecting rods have bronze bushed bearings in plungers and strap head crank bearings with phosphor-bronze boxes. Sight-feed oilers. Suction connection at either end of the Pump; discharge on the other side. Pump may be placed in any position relative to the paper machine.

When inquiring about Suction Pumps please state—

Width of paper machine, number of suction boxes.

Range of speeds.

Kind of stock used, weights of paper made.

General Working Conditions.

Prices upon application.

FIG. 956. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Rev. of Crank Shaft.	Usual Speed per Minute.	SIZES OF PIPE.		Geared.	Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
7 in.	8 in.	4. gals.	50 revs.	4 in.	4 in.	4 to 1	30 x 5 in.	Wrangle
8 "	10 "	6.5 "	50 "	6 "	5 "	5 to 1	36 x 6 "	Wrap
8 "	12 "	7.8 "	50 "	6 "	5 "	5 to 1	36 x 6 "	Wrapper

GOULDS HORIZONTAL VACUUM PUMP.

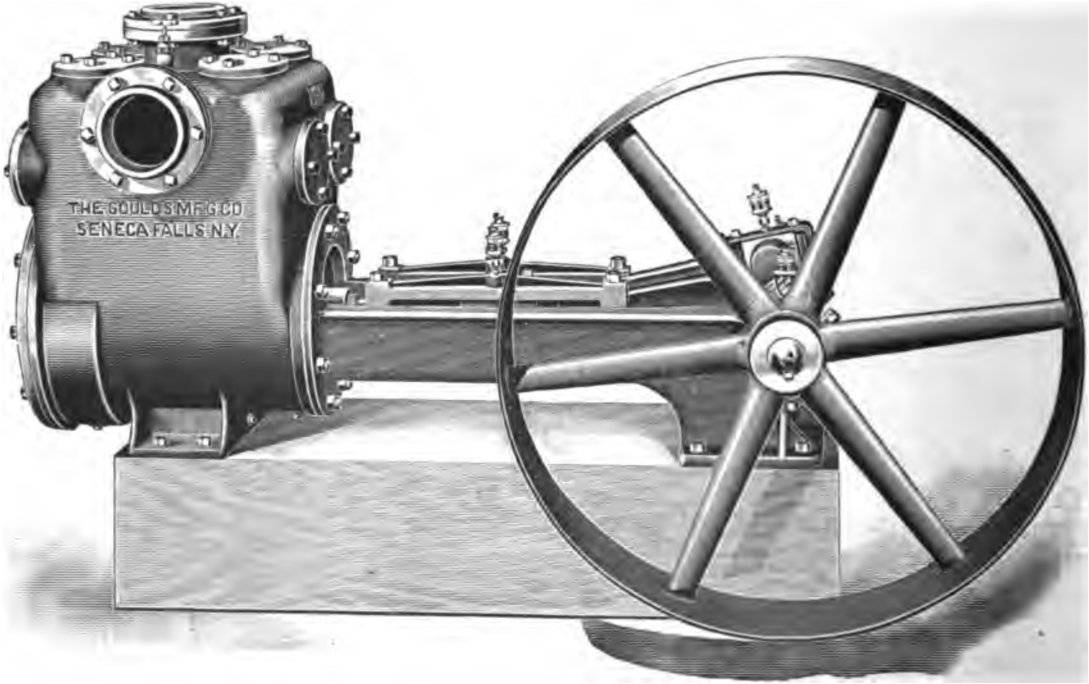


FIG. 1022. SIZE 14" x 10"

GOULDS HORIZONTAL VACUUM PUMP.

Fig. 1022 is a high grade, efficient and reliable pump for vacuum work. It is horizontal, single-cylinder, with double-acting piston.

The cylinder has a bronze lining, arranged to equalize the wear and to provide true alignment. This can be speedily removed by a millwright, with an ordinary wrench. The piston is of bronze, fitted with fibrous packing. The piston rod is of Tobin bronze and with bronze stuffing boxes. Large valve area. Valves quickly accessible. Crossheads and guides have adjustment for taking up wear. Connecting rod is in one piece, with strap ends and with phosphor bronze boxes. Crank shaft of steel. Discharge connections at rear side of cylinder. Suction at both front and top. Sight feed oilers

It is used with surface condensers in connection with steam engines, with evaporators and for other service where high vacuum is to be maintained. Please state the quantity of water condensed per minute or hour, or the speed of engines, size of cylinders and terminal pressure.

This Pump is also used in many of the newest paper mills, in connection with suction boxes with high-speed paper machines on news, and performs this exacting and important service (the essential of fast running) in a reliable and satisfactory manner. It is used with these machines, running manila, book, fine writings, etc. Please state width of paper machines, number of suction boxes on the wire and on the felt, and whether one Pump is intended for the wire or felt boxes, or for both.

Prices upon application.

FIG. 1022. SIZES, CAPACITIES, ETC.

Piston.		Displacement One Revolution of Crank Shaft.	Speed of Crank Shaft per Minute.	Sizes of Pipe.		Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.		
8 in.	10 in.	4.3 gals.	40 to 60 revs.	4 in.	4 in.	48 x 4 in.	Acnodal
10 "	10 "	6.8 "	40 to 60 "	4 "	4 "	48 x 5 "	Acnode
12 "	10 "	9.6 "	30 to 50 "	5 "	5 "	48 x 6½ "	Abactor
14 "	10 "	13.2 "	30 to 50 "	6 "	6 "	48 x 8½ "	Abacus
14 "	14 "	18.8 "	30 to 40 "	8 "	8 "	48 x 10½ "	Bunol
16 "	16 "	27.8 "	25 to 35 "	8 "	8 "	60 x 10½ "	Buntel

GOULDS HORIZONTAL VACUUM PUMP.

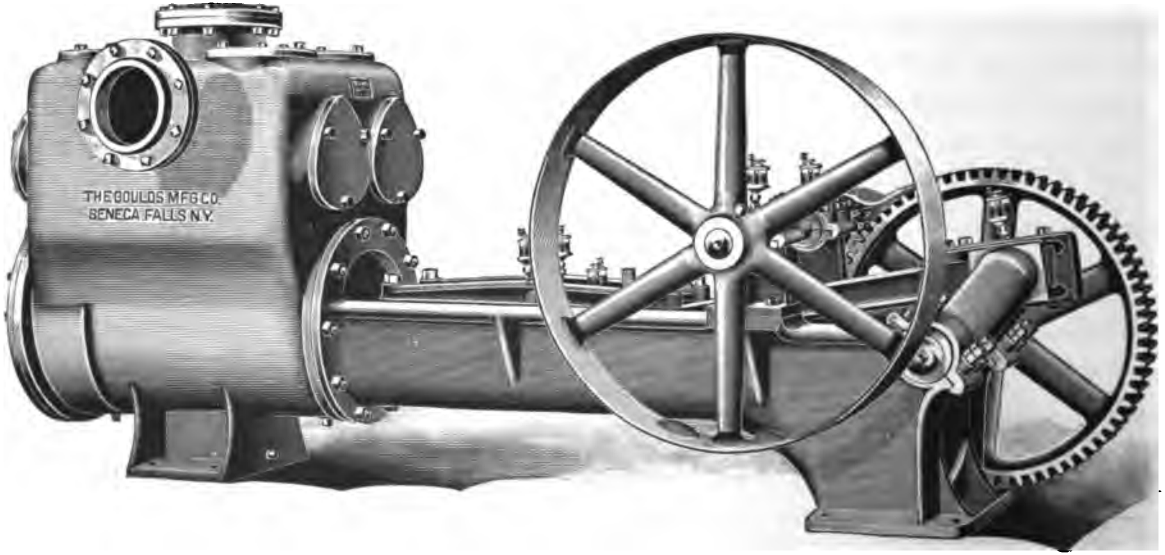

THE GOULDS MFG CO.
SENECA FALLS N.Y.

FIG. 1049. SIZE 16" x 16"

GOULDS HORIZONTAL VACUUM PUMP.

Fig. 1049, Geared Horizontal Vacuum Pump, has cylinder with bronze lining, arranged to equalize the wear and provide true alignment. This can be speedily removed by a millwright with an ordinary wrench. The piston is of bronze, fitted with fibrous packing. The piston rod is of Tobin bronze. Bronze stuffing boxes. Large valve area. Valves quickly accessible. Machine cut gears. Crosshead and guides have adjustment for taking up wear. Connecting rod is in one piece, with strap ends and with phosphor bronze boxes. Crank shaft of steel. Discharge connections are at rear side of cylinder. Suction at both front and top. Sight feed oilers. Pump may be used with surface condensers in connection with steam engines or for other service where high vacuum is to be maintained. State quantity of water condensed per minute or hour. Where used with paper machines, state width of machine, number of suction boxes on the wire and on the felt, whether one Pump is needed for the wire or felt boxes, or for both. We recommend our Fig. 1049, Geared Pump, where operated from fast runing driving shafts.

Prices upon application.

FIG. 1049. SIZES, CAPACITIES, ETC.

Piston.		Displacement One Revolution of Crank Shaft.	Speed of Crank Shaft per Minute.	Sizes of Pipe.		Geared.	Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
8 in.	10 in.	4.3 gals.	40 to 60 revs.	4 in.	4 in.	4 to 1	30 x 4 in.	Dreba
12 "	10 "	9.6 "	30 to 50 "	5 "	5 "	4 to 1	30 x 5 "	Drebef
14 "	10 "	13.2 "	30 to 50 "	6 "	6 "	4 to 1	30 x 5 "	Drebegl
14 "	14 "	18.6 "	30 to 40 "	6 "	6 "	4 to 1	36 x 6 "	Curyme
16 "	16 "	27.8 "	25 to 35 "	8 "	8 "	4 to 1	36 x 6 "	Cusab
18 "	18 "	39.5 "	25 to 35 "	10 "	8 "	4 to 1	42 x 8 "	Repegl

GOULDS VERTICAL TRIPLEX VACUUM PUMP.

(Patented Nov. 8, 1898.)

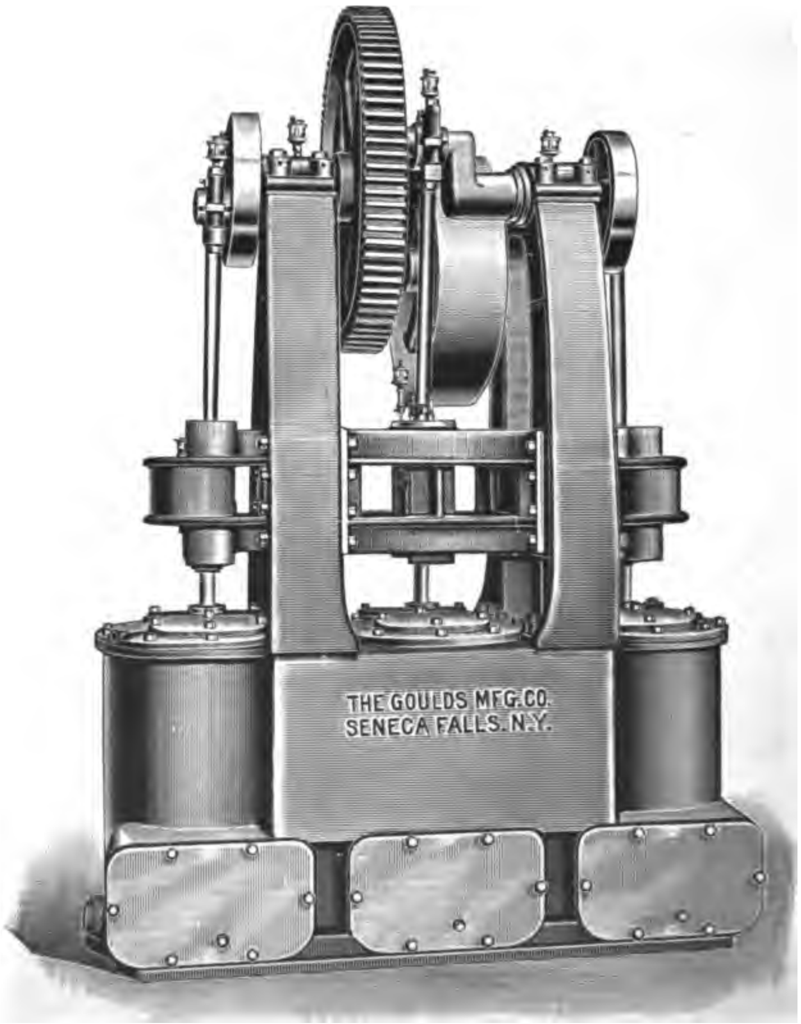

THE GOULDS MFG. CO.
SENECA FALLS, N.Y.

FIG. 1124. SIZE 14" X 12"

GOULDS VERTICAL TRIPLEX VACUUM PUMP.

(Patented Nov. 8, 1898.)

Fig. 1124 is a Vertical, Triplex, Single-Acting Vacuum Pump, of a design never before presented for this work. It is vastly superior to what is embodied in any other Vertical Pump known to the trade. In building a Pump of such a progressive and distinctive type we are holding to our faith in a class of purchasers who want only the very best and who appreciate good machinery.

For paper mill work the constantly increasing speed of paper machines and the greater widths emphasize the fact that SUCTION is a prime consideration for safe running at fast speeds, involving the use of more suction boxes and pumps of great capacity and suction power. To meet these requirements we have brought out a complete new line of Triplex Vacuum Pumps, of ample capacity for the widest and fastest machines. We invite correspondence, and full information as to design, materials and construction will be furnished and performance of service will be guaranteed.

It is used with surface condensers in connection with steam engines, with evaporators and for other service where high vacuum is to be maintained.

Please state the quantity of water condensed per minute or hour, or speed of engines, size of cylinders, and terminal pressure.

Prices upon application.

FIG. 1124. SIZES, CAPACITIES, ETC.

PISTONS.		Displacement One Revolution of Crank Shaft.	Speed of Crank Shaft per Minute.	SIZES OF PIPE.		Geared.	Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
14 in.	12 in.	23.9 gals.	30 to 40 revs.	8 in.	6 in.	5.3 to 1	30 x 7 in.	Wrecla
16 "	12 "	31.3 "	30 to 40 "	10 "	8 "	5.3 to 1	30 x 8½ "	Wrecmo
18 "	12 "	39.6 "	30 to 40 "	12 "	10 "	5.3 to 1	30 x 9 "	Wrecny

GOULDS DOUBLE-ACTING TRIPLEX VACUUM PUMP.

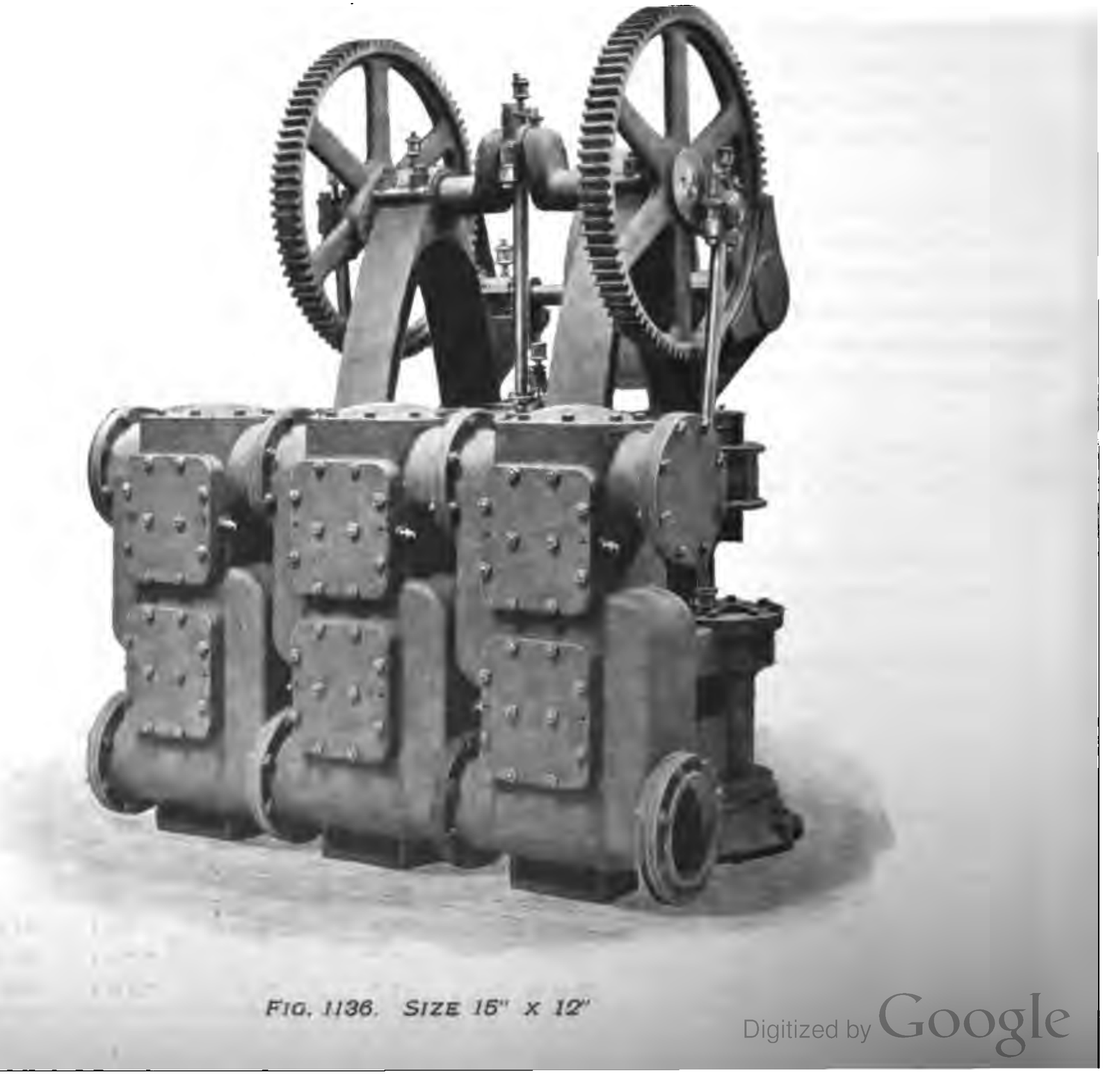


FIG. 1136. SIZE 15" x 12"

GOULDS DOUBLE-ACTING TRIPLEX VACUUM PUMP.

Fig. 1136, Triplex Double-Acting Vacuum Pump, is a new type for use with Surface Condensers, Evaporators, etc., and for Paper Machine Suction Boxes.

It is a strong, substantial, well built Pump. It has machine-cut gearing. The driving pulley is on the pinion shaft, between the pinions, or at either end of Pump, the pinion shaft being extended and provided with an outboard bearing. The bearings are of bronze and are adjustable for taking up wear. The cylinders are bronze lined. Pistons, piston rods and stuffing boxes are all bronze. Suction and discharge pipe connections may be made at either end of the Pump.

In steam power plants, for use in connection with Surface Condensers, we should be advised of the speed, size of cylinders and other data regarding the Engine, and for Condenser work generally the conditions should be carefully stated.

In paper mills, for use in connection with paper machine suction boxes, it is a very effective, reliable Pump. It may be divided between boxes on the wire and the felt, using one cylinder for the felt suction boxes and the remaining two cylinders for the wire, or *vice versa*, according to requirements.

Prices upon application.

FIG. 1136. SIZES, CAPACITIES, ETC.

Pistons.		Displacement One Revolution of Crank Shaft.	Speed of Crank Shaft per Minute.	Sizes of Pipe.		Geared.	Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
12 in.	12 in.	35 gals.	30 to 40 revs.	8 in.	8 in.	5.3 to 1	30 x 8	Zitfa
15 "	12 "	55 "	30 to 40 "	10 "	10 "	5.3 to 1	30 x 8	Zitgel

For Power Table, see page 203.

GOULDS TRIPLEX POWER STUFF PUMP.

FOR ELEVATIONS TO 100 FEET, EQUIVALENT TO 43 POUNDS PRESSURE.

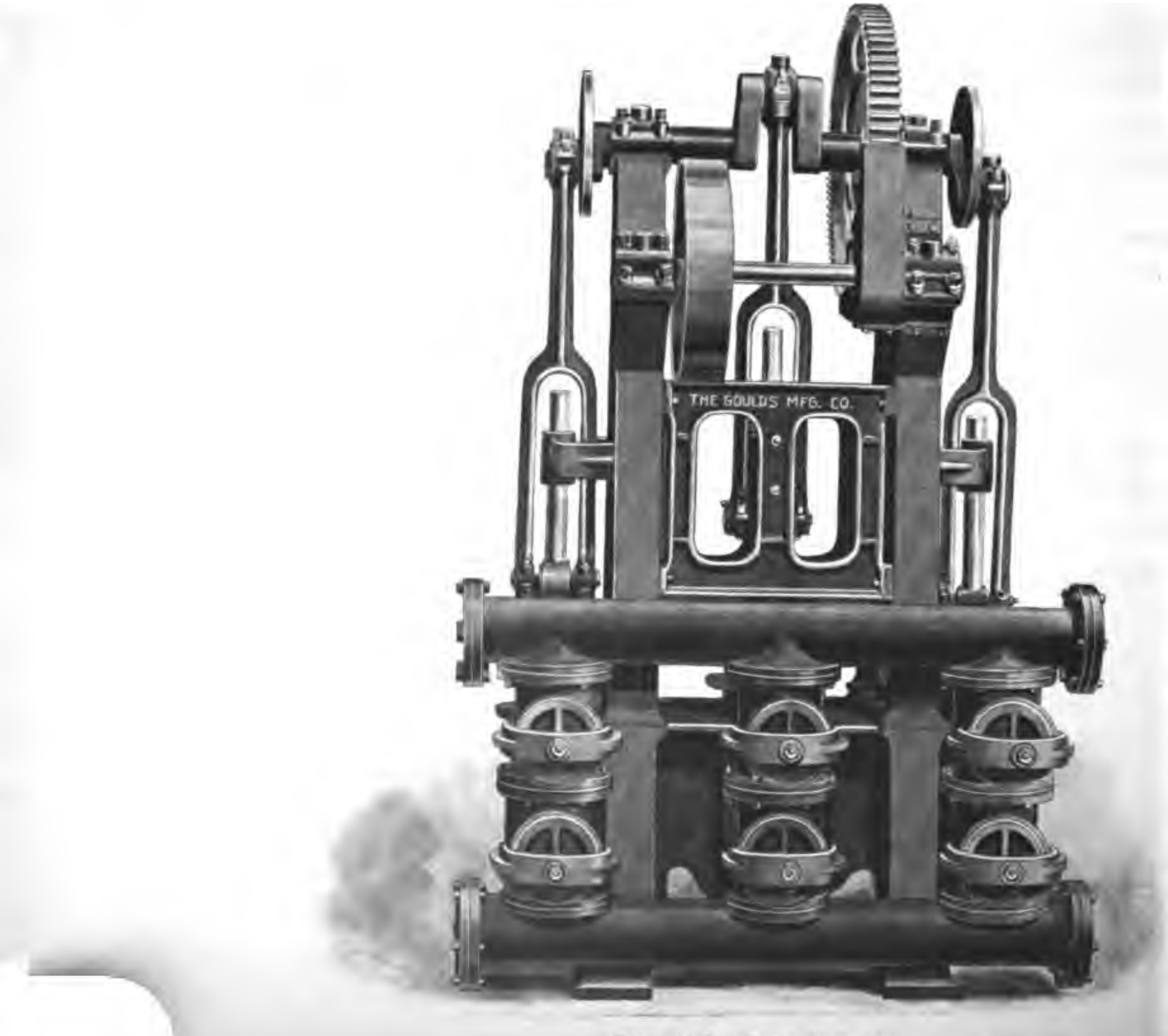


FIG. 1105. SIZE 8" X 10"

GOULDS TRIPLEX POWER STUFF PUMP. FOR PULP AND PAPER MILLS.

FOR ELEVATIONS TO 100 FEET. EQUIVALENT TO 43 POUNDS PRESSURE.

Fig. 1105, Triplex Stuff Pump, is a modern design, the result of our own experience and many valuable suggestions by expert paper makers.

It is self-contained, compact, rigid. Valves quickly accessible. Easily kept in perfect working condition. Suction and discharge pipe connections at both ends. The passages through the Pump have the full, rounded, easy curves which prevent lodgment of air or stuff and consequent formation of slugs.

The valves are bronze balls finished true and balanced. Valve seats are bronze and of the "flanged-in" type, removable by unbolting the valve chests. The valve weight and lift, opening through seat, and flow of stuff bear a certain relation to diameter and stroke of plunger, which insures reliable and effective delivery, details of prime importance which are carefully embodied in this Pump.

The mechanical construction and workmanship are of the best. The plungers are bronze. The bearings are of liberal size. The gear and pinion are machine-cut. The driving pulley and gearing are proportioned for a correct, sure drive from the rather fast running shafting now used in modern mills.

Prices upon application.

FIG. 1105. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity One Rev. of Crank Shaft.	Dry Paper in 24 Hours at Moderate Speeds.	SIZES OF PIPE.		Geared.	Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
6 in.	10 in.	3.6 gal.	13 to 18 tons.	5 in.	5 in.	4 to 1	20 x 6 in.	Waxkfs
7 "	10 "	5.0 "	18 to 24 "	5 "	5 "	4 to 1	24 x 7 "	Waxkge
8 "	10 "	6.5 "	25 to 32 "	6 "	6 "	4 to 1	24 x 7 "	Waxkho

For Power Table, see page 203.

GOULDS TRIPLEX STUFF PUMP. HEAVY PATTERN.

FOR ELEVATIONS TO 125 FEET, EQUIVALENT TO 54 POUNDS PRESSURE.

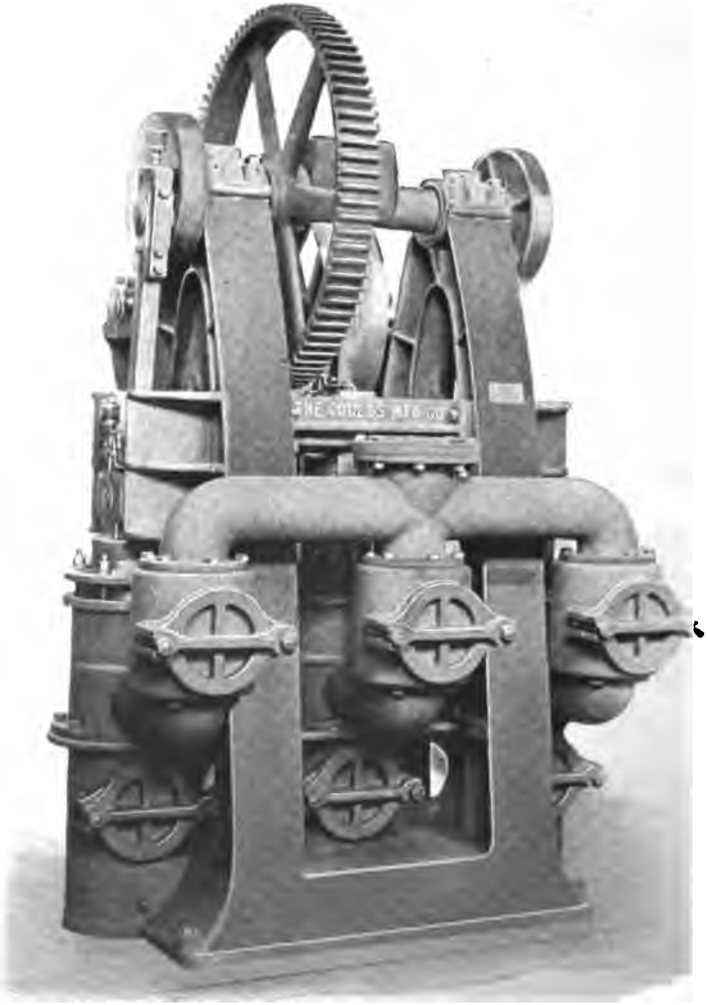


FIG. 1128. SIZE 9" x 12"

GOULDS TRIPLEX STUFF PUMP. HEAVY PATTERN.

FOR PULP AND PAPER MILLS.

FOR ELEVATIONS TO 125 FEET, EQUIVALENT TO 54 POUNDS PRESSURE.

The enormous quantity of stuff required by the big, fast paper machines and the transferring of ground wood and sulphite to the machine rooms involve the use of Stuff Pumps of large capacity and constructed in the best possible manner.

Our Fig. 1128, Triplex Stuff Pump, is designed with a thorough knowledge of modern pulp and paper mills. It is a Pump, complete with respect to design, excellence of materials, accuracy of workmanship and ample and properly distributed weight. It is distinctive in possessing the *substance* as well as the form of a high-class Pump, being built with bronze bearings with adjustments, and with other refinements of mechanical details not yet embodied in other Pumps offered for this work. The suction enters horizontally at the center of side opposite the vertical discharge shown in engraving.

It is intended to be as near absolute perfection and reliability as superior knowledge and skill can make it, and thus eliminate the vexatious and expensive delays incidental to the use of inferior Pumps.

We solicit correspondence regarding Pumps of this type, and shall be pleased to supply detailed specifications and other information in response to inquiries.

Prices upon application.

FIG. 1128. SIZES, CAPACITIES, ETC.

PLUNGERS.		Capacity one Revolution of Crank Shaft.	Dry Paper in 24 Hours, Moderate Speeds.	SIZES OF PIPE.		Geared.	Pulley.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
8 in.	10 in.	6.5 gals.	25 to 33 tons.	7 in.	7 in.	5 to 1	30 x 6½ in.	Wraixm
8 "	12 "	7.8 "	30 to 40 "	7 "	7 "	5 to 1	30 x 6½ "	Wrathljos
9 "	12 "	9.9 "	38 to 50 "	8 "	8 "	5.3 to 1	30 x 8½ "	Wrathop
10 "	12 "	12.2 "	50 to 60 "	10 "	10 "	5.3 to 1	30 x 10 "	Wrathus
12 "	12 "	17.6 "	60 to 80 "	10 "	10 "	5.3 to 1	30 x 10 "	Wrecoen

For Power Table, see page 203.

GOULDS TRIPLEX POWER STUFF PUMP.

FOR PAPER AND PULP MILLS

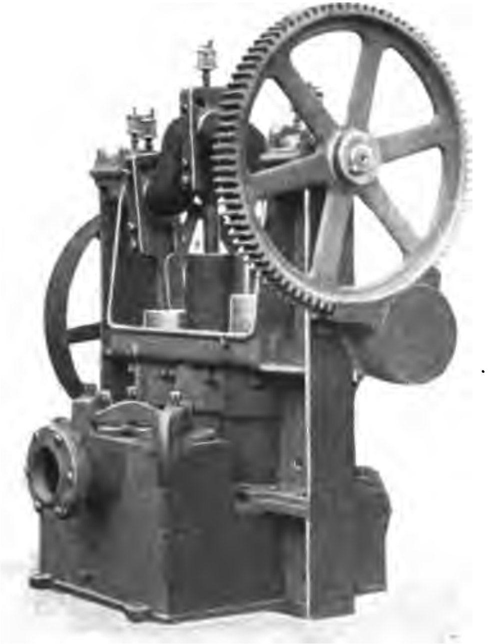


FIG. 959 SIZE 7" x 8"

Fig. 969, Triplex Power Stuff Pump, is self-contained and needs but a firm floor for a foundation. The valves are bronze balls with lift and weight as required, and with bronze seats. All quickly accessible.

The cylinders and glands are of great length and bronze-lined. The plungers are of phosphor bronze and have water seal, which aids the packings and insures easy running. All passages are shaped to scour clear, avoiding the formation of "slugs." Each connecting rod has bronze bushed bearing in plunger, and strap head crank bearing at crank with phosphor-bronze box. The crank shaft is in one piece and runs in large babbitt-lined bearings. Sight-feed oilers are provided. The gear and pinion are machine cut.

The pipe flanges are regularly threaded for standard wrought-iron pipe; prepared for copper pipe connections to order. The working strength is ample for all ordinary stuff pumping. Pumps for extra heavy work to order. Pumps without gears can be furnished, but geared pumps drive better and are easier on belts. When inquiring about Stuff Pumps, please state what the service will be.

Prices upon application.

FIG. 969. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.	†Speed per Minute and Capacity in 24 Hours, Varying With Kind of Paper.		Suction.	Discharge.	Geared.	Pulley.	Cipher.
Diameter.	Stroke.								
4 in.	4 in.	.65 gal.	25 to 40 revs.,	1.7 to 3 tons	3 in. pipe	3 in. pipe	5 to 1	20 x 3 in.	Clubbed
4 "	6 "	1. "	25 to 40 "	3 to 5 "	3 "	3 "	5 to 1	20 x 3 "	Wrasse
5 "	8 "	2. "	20 to 36 "	5 to 9 "	4 "	4 "	4 to 1	20 x 4 "	Wrathy
7 "	8 "	4. "	20 to 36 "	10 to 18 "	5 "	5 "	4 to 1	30 x 5 "	Wraw
8 "	10 "	6.5 "	20 to 30 "	16 to 24 "	6 "	6 "	5 to 1	36 x 6 "	Rifely

† This means the actual finished product of the Paper Machine. At stated speeds the Pump delivers sufficient stuff to make these amounts esides ample return.

For Power Table, see page 203.

GOULDS TRIPLEX POWER PUMP, FOR SEMI-FLUIDS.

FOR ELEVATIONS TO 100 FEET, EQUIVALENT TO 43 POUNDS PRESSURE.

Fig. 1017, Triplex Power Pump, is designed to pump sewage, tan liquor, oils, chemicals, heavy solutions, mud, tar, soap, etc.

It is regularly fitted with iron plungers, cylinders and glands, ball valves, tight and loose pulleys. This construction will be modified, to order, and the Pump will be fitted with bronze plungers, bronze-lined cylinders and glands, etc., at extra price.

It has a wide variety of applications, and we earnestly desire correspondents to state carefully the conditions under which the Pump is to operate, and what is required of it.

Prices upon application.

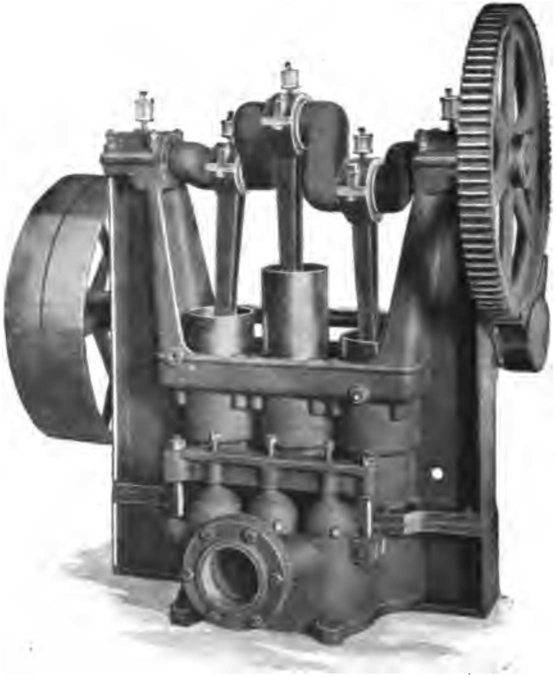


FIG. 1017. SIZE 7" X 8"

FIG. 1017. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	Sizes of Pipe.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
4 in.	4 in.	0.65 gals.	45 revs., 29 gals.	3 in.	3 in.	5 to 1	20 x 3 in.	Surgent
4 "	6 "	1. "	45 " 44 "	3 "	3 "	5 to 1	20 x 3 "	Surgeon
5 "	6 "	1.5 "	40 " 60 "	4 "	4 "	4 to 1	20 x 4 "	Swack
5 "	8 "	2. "	40 " 80 "	4 "	4 "	4 to 1	20 x 4 "	Swiss
7 "	8 "	4. "	40 " 160 "	5 "	5 "	4 to 1	30 x 5 "	Switch
8 "	10 "	6.5 "	40 " 260 "	6 "	6 "	5 to 1	36 x 6 "	Tilting
8 "	12 "	7.8 "	40 " 312 "	6 "	6 "	5 to 1	36 x 6 "	Tinted

For Power Table, see page 203.

GOULDS TRIPLEX POWER AMMONIA PUMP.

(Patents Applied For.)

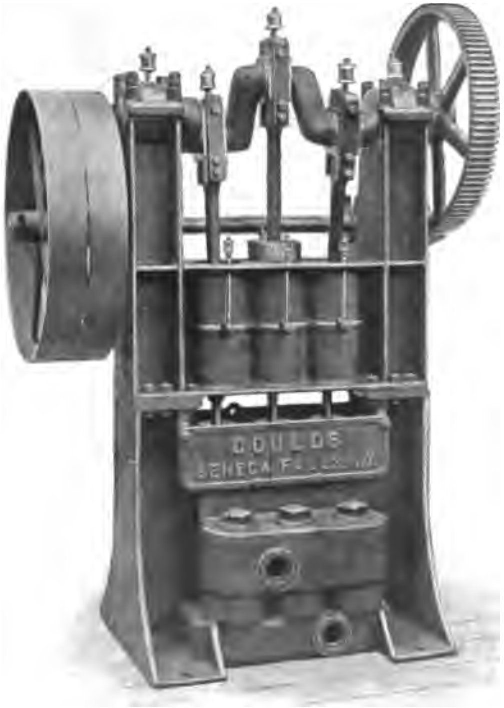


FIG. 1195. SIZE 3½" X 8"

Fig. 1195, Triplex Power Ammonia Pump, is constructed for pumping aqua ammonia in connection with refrigerating machinery, for cold storage, ice-making plants, etc.

Practical experience in using Aqua Ammonia Pumps has led us to radical changes in design and construction. This new type fully eliminates even the possibility of leakage and embodies other improvements of equally great merit.

It is a Triplex Pump, running steadily, receiving and delivering aqua ammonia regularly, and does this work uniformly at all times, without being watched and adjusted, and thereby increases the refrigerating capacity of the plants. The joints and connections of the many coils and piping are thus spared the shock and vexatious leakages incidental to the use of other types of ammonia pumps.

It is substantial, well-built and occupies but small floor space. The connecting rods have strap heads and phosphor bronze boxes. The crank shaft is steel and runs in bronze bearings. These Pumps are built of material wholly unaffected by ammoniacal liquid and are proportioned to sustain the exacting and continuous service of refrigerating plants. The limit pressure is 250 pounds.

Prices upon application.

FIG. 1195. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.		Usual Speed and Capacity per Minute.		Sizes of Pipe.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.					Suction.	Discharge.			
1⅞ in.	6 in.	49.6 cu. in.,	.21 gals.	35 revs.,	7.35 gals.	1¼ in.	1 in.	5 to 1	20 x 3 in.	Zynfo
2½ "	6 "	88 "	.31 "	35 "	10.85 "	1½ "	1¼ "	5 to 1	24 x 3 "	Zvngt
3½ "	8 "	231 "	1.0 "	35 "	35. "	2 "	2 "	5 to 1	30 x 4 "	Zynbo
5 "	8 "	470 "	2.04 "	35 "	71.4 "	3 "	3 "	5 to 1	30 x 6 "	Zynfvf

For Power Table, see page 203.

GOULDS TRIPLEX POWER BRINE PUMP.

FOR ELEVATIONS TO 100 FEET, EQUIVALENT TO 43 POUNDS PRESSURE.

Fig. 1059, Triplex Power Pump, is designed to circulate Brine in refrigerating and cold-storage plants, etc. It is of neat and compact design, well built and reliable. The gearing is machine-cut; tight and loose pulleys; crank shaft in one piece. The 7 x 8 inch and smaller have rods with crank bearings like Fig. 1140, page 182, and bushed bearings in plungers; large valve area.

These Pumps are regularly fitted for pumping solutions of chloride of calcium as a refrigerating medium, with iron plungers, cylinders, glands and rubber disc valves. These parts will be made of bronze to order, at extra price, if the Pump is to circulate solutions of common salt or other fluids destructive to iron. Always describe requirements as fully as possible.

Prices upon application.

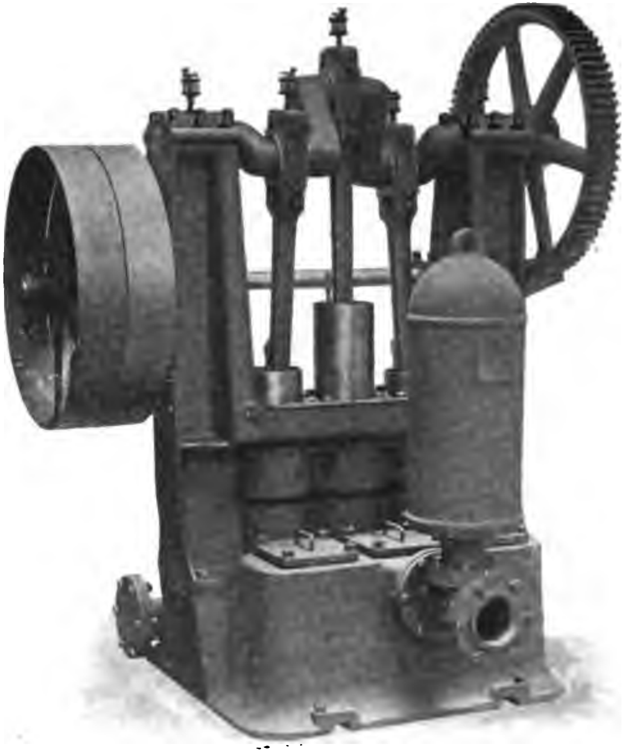


FIG. 1059. SIZE 8" X 12"

FIG. 1059. SIZES, CAPACITIES, ETC.

Plungers.		Capacity One Revolution of Crank Shaft.	Usual Speed and Capacity per Minute.	Sizes of Pipe.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
4 in.	6 in.	1. gal.	45 revs., 45 gals.	2 in.	2 in.	5 to 1	20 x 3 in.	Boxhaul
5 "	8 "	2. "	45 " 90 "	3 "	3 "	5 to 1	26 x 4 "	Boxing
7 "	8 "	4. "	45 " 180 "	5 "	5 "	4 to 1	30 x 5 "	Boxiron
8 "	10 "	6.5 "	40 " 260 "	6 "	5 "	5 to 1	36 x 6 "	Boxkeep
8 "	12 "	7.8 "	40 " 312 "	6 "	5 "	5 to 1	36 x 6 "	Boxthor

For Power Table, see page 203.

GOULDS SEPARATE TRIPLEX POWER PUMP.

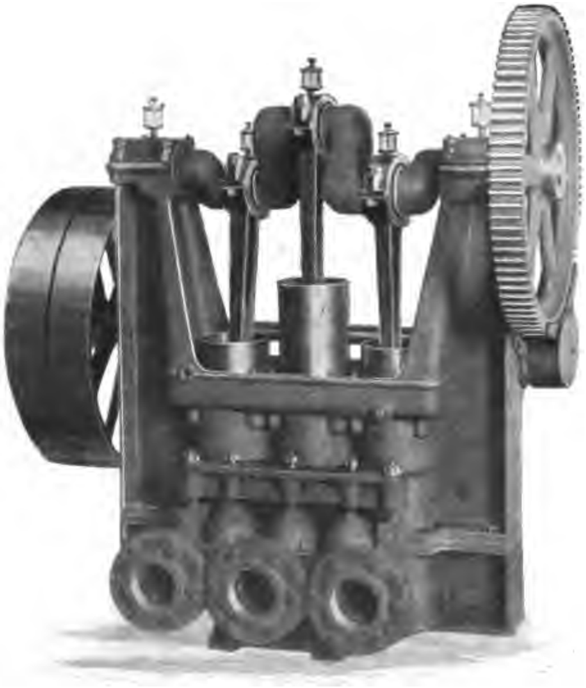


FIG. 1072. SIZE 7" x 8"

FOR ELEVATIONS TO 100 FEET, EQUIVALENT TO 43 POUNDS PRESSURE.

Fig. 1072 is a Pump comprising three separate Pumps, each with its independent suction and discharge pipe connections, and driven by one crank shaft. This combination saves space and power and admits of pumping several fluids at once. It is used in gas and chemical works, refineries, etc., for pumping ammonia water, tar, semi-fluids, etc.

It is regularly fitted with ball valves, iron plungers, cylinders and glands. Tight and loose pulleys, machine-cut gearing, and valves, as required for the specified service. The general design and construction are clearly indicated by the illustration.

Prices upon application.

FIG. 1072. SIZES, CAPACITIES, ETC.

Plungers.		Capacity of Each Plunger per Rev.	Usual Speed and Capacity per Minute of Each Plunger.	Sizes of Pipe.		Geared.	Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.			Suction.	Discharge.			
4 in.	4 in.	.22 gals.	40 revs., 8.8 gals.	2 in.	2 in.	5 to 1	20 x 3 in.	Woolmo
4 "	6 "	.33 "	40 " 13.2 "	2 "	2 "	5 to 1	20 x 3 "	Woolnd
5 "	6 "	.51 "	40 " 20.4 "	3 "	3 "	5 to 1	20 x 4 "	Wooleg
5 "	8 "	.68 "	40 " 27.2 "	4 "	4 "	4 to 1	20 x 4 "	Woolea
7 "	8 "	1.33 "	40 " 53.2 "	5 "	5 "	4 to 1	30 x 5 "	Woolqt

For Power Table, see page 203.

GOULDS TRIPLEX POWER PRESSURE PUMP.

FOR VARIABLE DELIVERY.

Fig. 1034 is a modification of our standard Triplex Pressure Pump, Fig. 997, page 187. Instead of having three plungers, identical in size and working power, one plunger is of larger diameter and greater displacement than the others. When used with a press or other hydraulic machine, the initial movement of the ram is made more rapidly by the combined delivery of the three plungers, until a certain pressure is reached, then an automatic device cuts out the larger plunger and the operation is continued by the smaller plungers to the desired pressure. The pressure on the larger plunger should not exceed 25 per cent. of the maximum pressure exerted by the Pump.

Hydraulic Pressure Pumps of this form are particularly serviceable for Baling Presses, Testing Machines, etc., in mills and factories.

In making inquiries or orders, state fully the services required of the Pump.

Prices upon application.

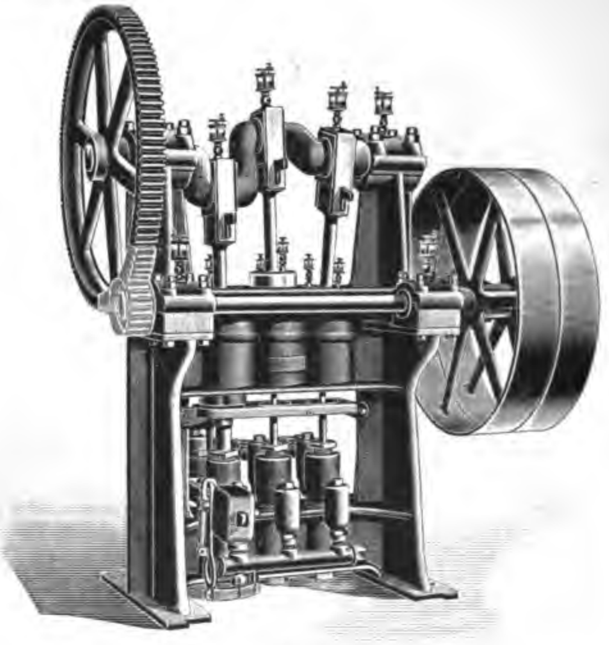


FIG. 1034. SIZE ¾" AND 1½" X 6"

FIG. 1034. SIZE, CAPACITY, ETC.

PLUNGERS.		Capacity One Revolution of Crank Shaft.	Speed and Capacity per Minute, Varying with Kind of Work and Pressure.	Limit Pressure per Square Inch.	SIZES OF PIPE.		Tight and Loose Pulleys.	Cipher.
Diameter.	Stroke.				Suction.	Discharge.		
¾ in. and 1½ in.	6 in.	15.8 cu. in. or 0.068 gals.	25 to 50 revs. 1.7 to 3.4 gals.	5,000 lbs.	1 in.	¾ in.	26 x 4 in. geared 7 to 1	Turf

For Power Table, see page 203.

GOULDS VERTICAL POWER FORCE PUMPS.

WITH CRANK SHAFT, FOR EITHER HAND OR POWER

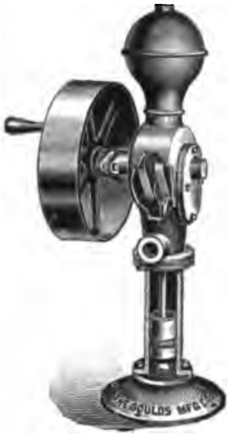


FIG. 1204

Fig. 1204 represents our new Vertical Power Force Pump, or, as it is often called, "Covered Crank Pump." Cut of Fig. 1204 gives sectional view, showing arrangement of plunger and valve in the standard, making a complete pump for drawing water from cisterns, shallow wells and streams, where the vertical suction lift is not over twenty-five feet. The Pump, as we now build it, having crank-shaft with bearing on each side of crank, possesses many advantages over the earlier types, and we believe its compact form and low price will commend it for almost innumerable uses. When so ordered, we can furnish with crosshead or guide (in place of plunger and lower valve), thus adapting it for operating a cylinder (see pages 62 and 63) in wells where water stands more than twenty-five feet below the Pump. Pump ,thus arranged with crosshead, furnished at price of regular pump, but the deep well cylinder costs extra. Fig. 1205 differs from Fig. 1204, described above, only in that it has tight and loose pulleys. This Pump is largely used in creameries and milk stations, wherever it is desired to force liquids to elevations of fifty feet or less. Arrangement of plunger and valve is as shown in sectional view of Fig. 1204. Can be made for deep wells, same as Fig. 1204, and same remarks apply.

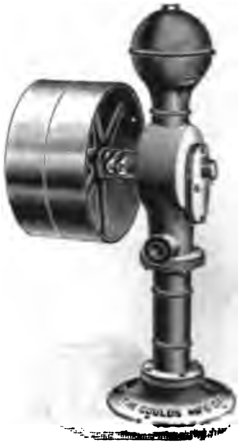


FIG. 1205

FIG. 1204. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Pulleys, Each.	* Lift and Force.	Cipher.	Price.
4	3 in.	6 in.	.18 gal.	1¼ in. pipe	1¼ in. pipe	15 x 3 in.	50 ft.	Waretu	$27.00
6	3½ "	6 "	.25 "	1½ "	1½ "	15 x 3 "	50 "	Wareul	30.00

FIG. 1205. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Pulleys, Each.	* Lift and Force.	Cipher.	Price.
4	3 in.	6 in.	.18 gal.	1¼ in. pipe	1¼ in. pipe	15 x 3 in.	50 ft.	Warevz	$32.00
6	3½ "	6 "	.25 "	1½ "	1½ "	15 x 3 "	50 "	Warewy	35.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water. Hot water must flow to Pump.

GOULDS HAND BOILER FEED PUMPS.

WITH BRASS-FITTED GLOBE CHECK VALVE.

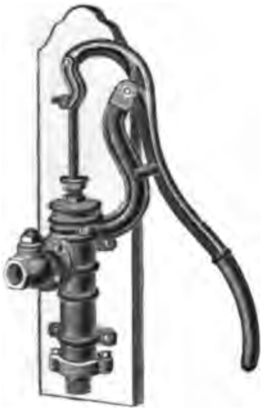


FIG. 289

Fig. 289 represents a Hand Boiler Feed Pump on plank, for feeding cold boilers or those under moderate steam pressure, as 40 to 60 pounds. It is also well adapted for supplying feed water to boilers employed for making steam for heating only, etc.

The Pumps are supplied with brass-fitted globe check valve on discharge, preventing water from returning to Pump. They have brass plunger and lower valve, adapting them for pumping hot as well as cold water. Where Pumps must handle hot water, we always advise placing them under flooded suction.

These Pumps are heavy and substantial in build, having revolving bearer, brass gland and brass-cased piston rod, and must not be confused with cheaper Pumps of this class.

Fig. 495 is built on same lines as Fig. 289, described above, except that it is a Base Pump. It is designed for the same range of duty.

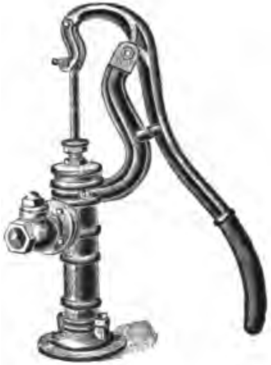


FIG. 495

FIG. 289. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Equivalent Pressure.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	120 ft.	51 lbs.	Digit	$12.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	90 "	38 "	Dikes	14.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	25 "	Dimal	16.00

FIG. 495. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	*Lift and Force.	Equivalent Pressure.	Cipher.	Price.
0	2 in.	6 in.	.08 gal.	1 in. pipe	1 in. pipe	120 ft.	51 lbs.	Headek	$12.00
2	2½ "	6 "	.13 "	1¼ "	1¼ "	90 "	38 "	Healed	14.00
4	3 "	6 "	.18 "	1¼ "	1¼ "	60 "	25 "	Heaps	16.00

*** Total lift and force from supply to point of delivery, Pump not more than 25 feet above water. Hot water must flow to Pump.**

GOULDS PLUNGER BOILER FEED PUMP.

WITH COLUMN AND SINGLE PULLEY FOR HAND OR MACHINE POWER

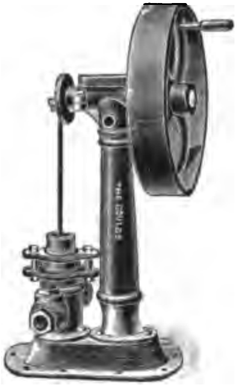


FIG. 482

Fig. 482 represents our Power Boiler Feed Pump on bed plate, with column, crank shaft and face plate, with single pulley, for hand or machine power. Capable of handling hot water as well as cold.

Pump has general application for feeding cold boilers or those under moderate steam pressure. Has special bronze check valves and outside-packed plunger.

We always recommend shortest possible suction pipe with Boiler Feed Pump, as it lessens the danger of losing its priming.

FIG. 482. SIZES, PRICES, ETC.

No.	Dia. of Cyl.	Stroke.	Capacity per Min., 60 Strokes.	Suction.	Discharge.	*Lift and Force.	Equivalent Pressure.	Pulley.	Cipher.	Price.
0	2 in.	3 in.	2.45 gal.	1 in. pipe	1 in. pipe	120 ft.	60 lbs.	16 x 3 in.	Gull	$35.00
2	2½ "	3 "	3.82 "	1 "	1 "	90 "	45 "	18 x 4 "	Gullyx	37.50
4	3 "	3 "	5.51 "	1¼ "	1¼ "	60 "	30 "	20 x 4 "	Gulps	40.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water. Hot water must flow to Pump.

GOULDS PLUNGER BOILER FEED PUMP.

WITH COLUMN AND TWO PULLEYS, FOR HAND OR MACHINE POWER.

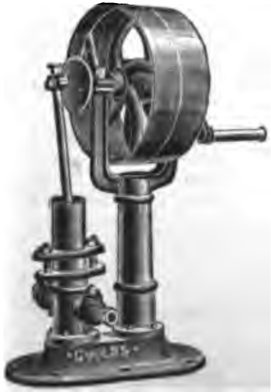


FIG. 484

Fig. 484 represents improved pattern of Power Boiler Feed Pump with crank shaft, face plate, tight and loose pulleys, for hand or machine power. On the end of driving shaft opposite the face plate is a heavy iron crank with wrought-iron handle for working Pump when necessary.

Pumps may be employed for feeding steam boilers under moderate pressure, or any other service within limits cited in our table below.

Has special bronze check valves and outside-packed plunger and is capable of handling hot water.

FIG. 484. SIZES, PRICES, ETC.

No.	Dia. of Cyl.	Stroke.	Capacity per Min., 60 Strokes.	Suction.	Discharge.	*Lift and Force.	Equivalent Pressure.	Pulley.	Cipher.	Price.
0	2 in.	3½ in.	2.45 gal.	1 in. pipe	1 in. pipe	120 ft.	60 lbs.	16 x 3 in.	Hairs	$40.00
2	2½ "	3½ "	3.82 "	1 "	1 "	90 "	45 "	16 x 3 "	Haily	42.50
4	3 "	3½ "	5.51 "	1¼ "	1¼ "	60 "	30 "	16 x 3 "	Halfs	45.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water. Hot water must flow to Pump.

GOULDS PLUNGER BOILER FEED PUMP.

WITH STUB END FOR MACHINE POWER.

Fig. 292 represents our Power Boiler Feed Pump for supplying steam boilers with water against any pressure. The globe check valves are made of separate castings, faced off and bolted on the body of Pump, thus making a tight-packed joint. The valve seats are made of best bronze and screwed into the iron castings, and can therefore be removed when worn out and new ones inserted. The valve itself is also of bronze. The stuffing-box, top of piston and stub end are finished bright and polished.

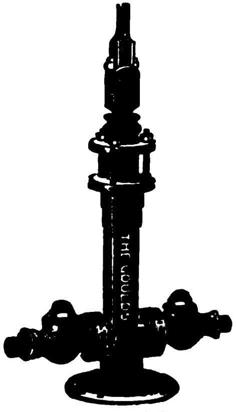


FIG 292

FIG. 292. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Minute, 60 Strokes.	Suction.	Discharge.	*Lift and Force.	Equiv. Pressure.	Cipher.	Price.
00	1½ in.	9 in.	4.13 gal.	1 in. pipe	1 in. pipe	250 ft.	107 lbs.	Dimed	$30.00
0	2 "	9 "	7.35 "	1¼ "	1¼ "	250 "	107 "	Dimal	35.00
2	2½ "	9 "	11.47 "	1¼ "	1¼ "	250 "	107 "	Dine	40.00
4	3 "	9 "	16.52 "	1½ "	1½ "	250 "	107 "	Dingy	50.00

*Total lift and force from supply to point of delivery, Pump not more than 25 feet above water. Hot water must flow to Pump.

See notes on Feed Water for Boilers, page 185.

GOULDS PLUNGER BOILER FEED PUMP.

WITH STUB END FOR MACHINE POWER.

Fig. 485 represents Power Boiler Feed Pump with trunk plunger, which we offer in several sizes given below. Suction and discharge brass check valves are screwed into opposite sides of cylinder. This cheap yet serviceable Pump has general application for feeding steam boilers under moderate pressure, or for any limit duty indicated in our tables.

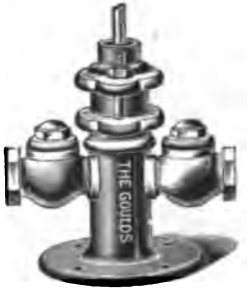


FIG. 485

FIG. 485. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Minute. 60 Strokes.	Suction.	Discharge.	*Lift and Force.	Equiv. Pressure.	Cipher.	Price.
2	1¼ in.	6 in.	1.27 gal.	¾ in. pipe	¾ in. pipe	150 ft.	64 lbs.	Halls	$10.00
3	1½ "	6 "	1.84 "	1 "	1 "	150 "	64 "	Halor	15.00
4	1½ "	3 "	1.37 "	¾ "	¾ "	150 "	64 "	Halt	14.00
5	2 "	3 "	2.45 "	1 "	1 "	120 "	51 "	Hames	18.00
6	2½ "	3 "	3.82 "	1 "	1 "	90 "	38 "	Hands	22.00
7	3 "	3 "	5.50 "	1¼ "	1¼ "	60 "	25 "	Hank	27.00
8	2 "	6 "	3.26 "	1¼ "	1¼ "	120 "	51 "	Hard	22.00
9	2½ "	6 "	5.10 "	1¼ "	1¼ "	90 "	38 "	Hares	30.00
10	3 "	6 "	7.35 "	1½ "	1½ "	120 "	51 "	Harks	40.00

*Total lift and force from supply to point of delivery, Pump not more than 20 feet above water. Hot water must flow to Pump.

See notes on Feed Water for Boilers, page 185.

"ROYAL" STEAM BOILER FEED PUMP.

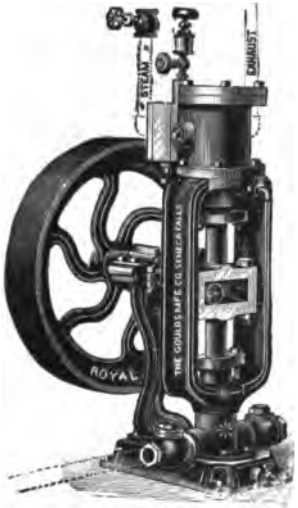

STEAM
EXHAUST
THE GOULDS MFG. CO. SENECA FALLS
ROYAL

FIG. 687

The "Royal" Steam Boiler Feed Pump has many points of merit in its arrangement, construction and proportions not found in any other pumps.

The main or frame casting, with supporting arm, is all in one piece, so that the shaft revolves in perfectly rigid bearings, while the eccentric connection works in a vertical line, without any lateral pressure on the valve rod to heave and pull the steam chest, cramp the rod and create friction. The cylinder heads have ground surfaces; the space between cylinder and chest is tapped on either side for the exhaust steam pipe, and the brass globe check valves are each designated "suction" or "discharge" for convenience, and can be connected on either side of Pump if necessary. If water is to be raised by suction, put a foot valve and strainer on end of suction pipe and make all joints tight.

Engineers all say that the GOULD "ROYAL" is the most substantial, best proportioned and modern in its general construction and arrangement of parts, of any of the large number of Single-Acting Boiler Feed Pumps, and always give it the preference over all others.

With each Pump we furnish Throttle Valve, Oil Cup and Let-Off Plugs.

The table below will give a full description of capacity, prices, etc., of these Pumps.

FIG. 687. SIZES, PRICES, ETC.

No.	Diameter Steam Cylinder.	Diameter Water Plunger.	Stroke.	Steam.	Exhaust.	Suction and Discharge.	Rev. per Minute.	Capacity per Minute.	*Lift and Force.	Equiv. Pressure.	Cipher.	Price.
1	3 in.	1⅜ in.	3 in.	⅜ in. pipe	¾ in. pipe	1 in. pipe	100	1.93 gal.	200 ft.	100 lbs.	Sagot	$44.00
2	3½ "	1¾ "	3 "	½ "	¾ "	1 "	100	3.12 "	200 "	100 "	Sailor	55.00
3	4 "	2¼ "	4 "	¾ "	1 "	1¼ "	90	6.20 "	200 "	100 "	Sakels	70.00
4	4½ "	2¾ "	4 "	¾ "	1 "	1¼ "	85	8.75 "	200 "	100 "	Salad	82.50
5	5 "	3½ "	4 "	¾ "	1¼ "	1½ "	80	13.33 "	200 "	100 "	Saleso	110.00
6	6 "	4 "	5 "	1 "	1½ "	2 "	75	21.75 "	200 "	100 "	Salty	154.00

* Total lift and force from supply to point of delivery, Pump not more than 25 feet above water. Hot water must flow to Pump.

Pumps with brass-lined cylinder and brass-cased plunger add to list No. 1, $8.00; No. 2, $10.00; No. 3, $12.50; No. 4, $16.00; No. 5, $21.00; No. 6, $30.00.

GOULDS HYDRAULIC PRESSURE OR TEST PUMP.

FOR TESTING BOILERS, PIPES, ETC.

Fig. 867 represents a new Hydraulic Pressure or Test Pump, of compact build and of commensurate strength for work for which it is designed.

It has a revolving top, admitting its being worked in any position, and a sectional lever, which can be changed to give greatest leverage. The suction and discharge valves (flanged and bolted to cylinder) are of a new and improved type, with brass valve seats, poppets and caps. The Pump should be placed within short suction distance of water, or on a level with it, and will be found invaluable to the boilermaker, or user, for testing the condition of boilers, vessels, etc., for cleaning out pipes, etc.

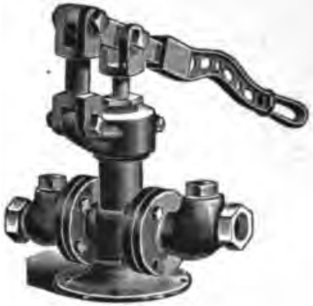


FIG. 867

FIG. 867. SIZES, PRICES ETC.

No.	Diameter Ram.	Stroke.	Suction and Dis.	Working Pressure.	Cipher.	Price.
0	¾ in.	5 in.	1 in. pipe	700 lbs.	Webbed	$18.50
1	1 "	5 "	1 "	550 "	Webbery	19.00
2	1¼ "	5 "	1 "	400 "	Webby	19.50
3	1½ "	5 "	1 "	200 "	Wedah	20.00

Can furnish with strong wood barrow, with cast-iron tank underneath, at $10.00 extra list.

GOULDS HIGH SERVICE PRESSURE OR TEST PUMP.

FOR TESTING BOILERS, TANKS, ETC.

Fig. 941 is designed to supply the demand for a Test Pump, capable of generating any desired pressure up to 6,000 pounds per square inch. The body or cylinder, as well as ram, is of steel, the valves of best gun metal and the lever forged from wrought-iron. In short, we have sacrificed nothing that would contribute to the strength and efficiency of this Pump, and the results have vindicated our policy. Our table of dimensions, given below, further illustrates the compactness and power of our Pump.

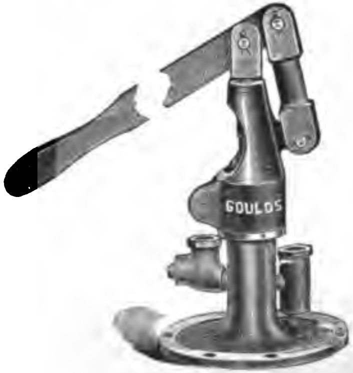


FIG. 941

FIG. 941. SIZE, PRICE, ETC.

Diameter Ram.	Stroke.	Suc. and Dis.	Working Pressure.	Cipher.	Price.
½ in.	2 in.	¼ in. pipe	6000 lbs.	Wetish	$30.00

GOULDS SODA WATER PRESSURE PUMP.

For Hand or Power Use.

Fig. 1086, Soda Water Pressure Pump, has frame cylinder support and plunger rod guide cast in one piece, this form of construction insuring proper alignment of the working parts.

The frame supports shaft, with connecting rod, and carries on one end tight and loose pulleys, and on other balance wheel with handle.

Pump has bronze cylinder, plunger and valves.

It may also be used for boiler testing or any pumping service where the pressure does not exceed 200 lbs.

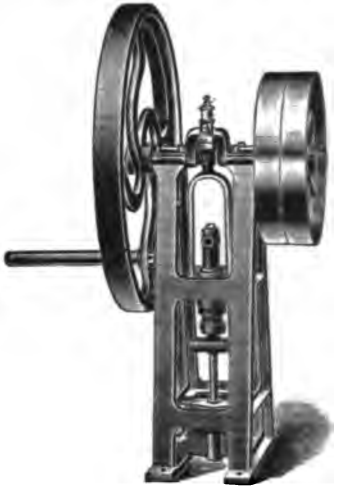


Fig. 1086

Fig. 1086. Size, Price, Etc.

Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Working Pressure.	Balance Wheel.	Pulleys.	Cipher.	Price.
1½ in.	6 in.	.05 gal.	¾ in. pipe	¾ in. pipe	200 lbs.	36 x 3½ in.	20 x 3 in.	Rudehi	$100.00

GOULDS SODA WATER PRESSURE PUMP.

Fig. 1083, Soda Water Pressure Pump, is simple in construction, all the parts being readily accessible. The base, lever socket, link and lever are made of iron. The plunger, cylinder and valves are of bronze. In addition to pumping water into soda water tanks, this pump may be used for boiler testing, or any service up to the limits of its working pressure, 200 lbs.

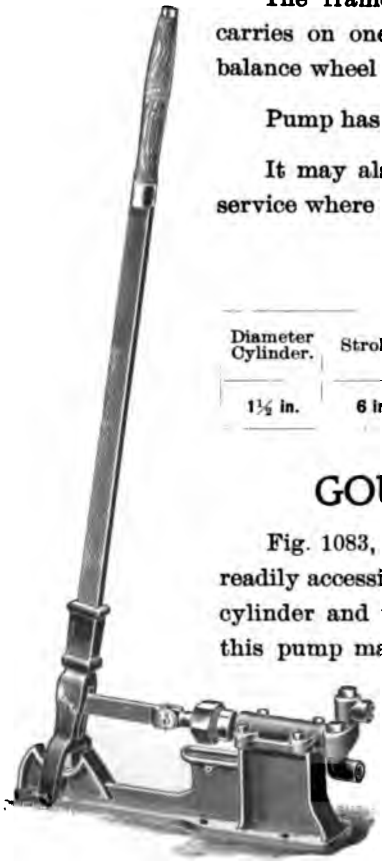


Fig. 1083

Fig. 1083. Sizes, Prices, Etc.

Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Working Pressure.	Cipher.	Price.
1 in.	5 in.	.02 gal.	½ in. pipe	½ in. pipe	200 lbs.	Rudefa	$20.00
1¼ "	5 "	.03 "	½ "	½ "	200 "	Rudegg	22.50

GOULDS HYDRAULIC TEST PUMP.

WITH CAST-IRON TANK.

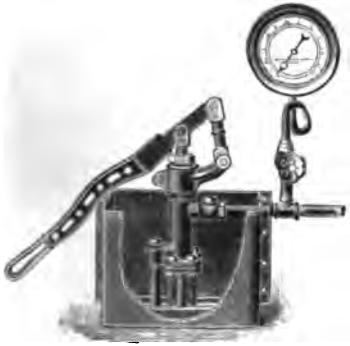


FIG. 789

Fig. 789 illustrates our new Gun Metal Test Pump, for testing boilers, tanks, pipes, etc., to one thousand pounds pressure on the square inch, if necessary. As the cistern only holds about two gallons of water, the thing to be tested should first be filled by other means and the tester then applied to supply the balance and work up the pressure.

Everything is made first-class in all respects. Weight about forty pounds.

FIG. 789. SIZE, PRICE, ETC.

Complete as shown, with ⅞-inch piston and delivery pipe screwed for ½-inch gas pipe coupling, (Wedder)	$30.00

This price does not include Test Gauge, which will be supplied of any desired size or style at lowest market rates.

PLUMBERS' BRASS FORCE PUMPS.

In Fig. 1035 we show our new Plumbers' Brass Force Pump, which, we believe, will meet the requirements and approval of the Trade. For removing obstructions in waste or water pipes, Pump is placed in vessel of water and pipe to be cleared connected to Pump by hose. For this purpose we furnish three feet of hose and conical tip, that may readily be connected to any ordinary sized pipe.

Pump is very compact and may easily be carried in sack of plumbers' tools, etc.

FIG. 1035. SIZE, PRICE, ETC.

1-inch Diameter Cylinder, 16-inch Stroke (Baldwin)	$7.00

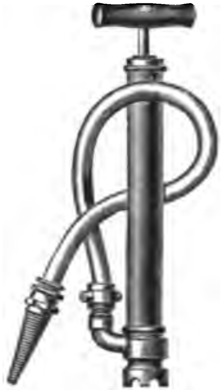


FIG 1035

PLUMBERS' BRASS FORCE PUMP.

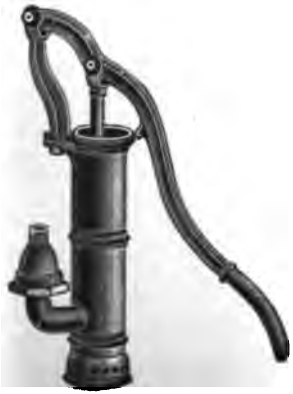


FIG. 322

Fig. 322 represents our Plumbers' Force Pump for removing obstructions in waste and water pipes. All working parts are brass. Discharge is furnished with brass check valve and fitted with hose coupling. In operating this Pump, a hose is connected to pipes to be cleared and Pump is set in vessel of water.

FIG. 322. SIZE, PRICE, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Stroke.	Discharge.	Cipher.	Price.
0	2 in.	5 in.	.07 gal.	¾ in. hose	Dusty	$7.00

GAS COMPANIES' AND PLUMBERS' DRIP PUMP.

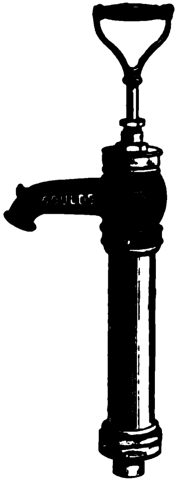


FIG. 323

Fig. 323, illustrated in cut, is our Plumbers' and Gas Companies' Drip Pump, for extracting the water from gas drips. These Pumps have brass cylinders, brass plunger, valve and plunger rod, glands, etc. Suction is regularly fitted for wrought-iron pipe, unless otherwise ordered.

FIG. 323. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Cipher.	Price.
0	2 in.	9 in.	.12 gal.	¾ in. pipe	Dutch	$12.00
2	2½ "	9 "	.19 "	¾ "	Chesteg	16.00

GOULDS "MAGIC" HAM-CURING PUMP.

ALL WORKING PARTS BRASS.

Fig. 922 represents our "Magic" Ham-Curing Pump. All working parts are brass, including double-crimp packed plunger, brass valves and seats. We furnish with this Pump 3 feet of ½-inch rubber suction and discharge hose and nickel-plated needle point. This is a well proportioned Pump, with a powerful leverage. The office of the Pump is to thoroughly impregnate the ham with a suitable preparation or pickle, thus curing it more quickly and better, in any season, than by the old process. We can furnish interested parties recipes for pickle.

FIG. 922. SIZE, PRICE, ETC.

No.	Diameter Cylinder.	Stroke.	Suction.	Discharge.	Cipher.	Price.
0	2 in.	5 in.	½ in. hose	½ in. hose	Wevill	$15.00

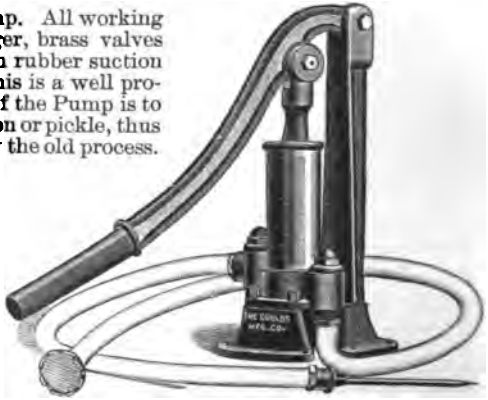


FIG. 922

GOULDS SPECIAL LIFT AND FORCE OIL PUMP.

FOR PUMPING KEROSENE AND OTHER OILS.

Fig. 1120 shows our Special Oil Pump for pumping kerosene, etc. It is so arranged that the lever may be operated by the left hand, leaving the right hand free to control the measuring tank, gauges, etc. This Pump is very strong and durable. The spout is reversible, so that the liquid may be discharged at either right or left of the Pump. This change is made by simply removing the lever and turning the spout either way.

FIG. 1120. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Stroke.	Suction.	Lift.	Cipher.	Price.
1	2¼ in.	6 in.	.10 gal.	1 in. pipe	25 ft.	Fustjub	$5.00
4	3 "	6 "	.18 "	1¼ "	25 "	Fustkub	5.50

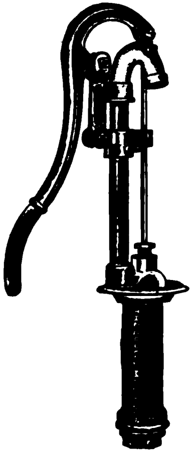


FIG. 1120

GOULDS GAS FITTERS' PROVING PUMP.

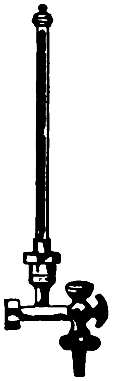
WITH SPRING OR MERCURY GAUGE.

Fig. 1065 shows our Gas Fitters' Proving Pump, with Spring Gauge. It affords the best known means of testing pipes. We price below Pump only, also complete with Spring or Mercury Gauge and Hose, as shown in engraving, if wanted.

FIG. 1065. SIZE, PRICE, ETC.

No.	Diameter Cylinder.	Stroke.	Displacement per Stroke.	Discharge.	Cipher.	Brass Pump Only.
0	2 in.	10 in.	31 cu. in.	⅜ in. hose	Dabcer	$12.00

Pump with Spring Gauge (or Mercury Gauge as ordered), Ether Cup, Cock and Hose Complete	$25.00
Spring Gauge	5.00
Mercury Gauge	5.00
Ether Cup and Cock	7.50
Hose per foot	.25



MERCURY GAUGE

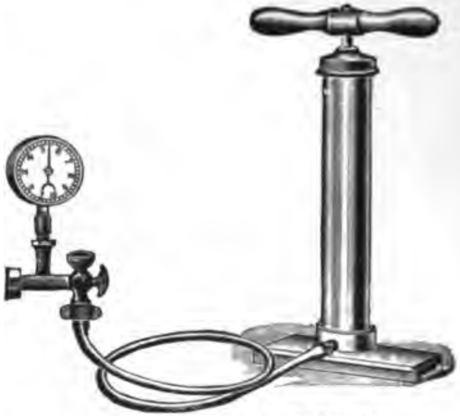


FIG. 1065

GOULDS DOUBLE-ACTING GAS OR AIR PUMP.

FOR GAS OR OIL WELLS.

Fig. 1130, Double-Acting Gas or Air Pump, is designed for use in gas and oil regions, for relieving the back pressure from oil wells or supplying boilers with gas from non-flowing wells.

Cylinder is cast iron with iron piston, metallic spring packed. The suction valves, placed upon one side of Pump and discharge valves upon opposite side, are bronze, leather faced, and easy of access. Pump is furnished, complete, with forked coupling and yoke for wood rod of walking beam.

FIG. 1130. SIZE, PRICE, ETC.

Diameter Cylinder.	Stroke.	Displacement Free Air per Revolution.	Suction.	Discharge.	Cipher.	Price.
14 in.	20 in.	6152 cubic in.	2 in. pipe	2 in. pipe	Waltab	$125.00

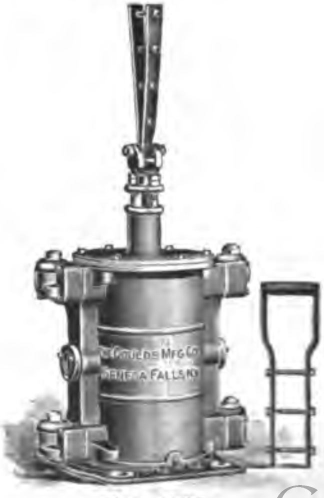


FIG. 1130

GOULDS BRASS PRESSURE OR VACUUM PUMP.

MOUNTED ON PLANK, WITH WROUGHT-IRON LEVER.

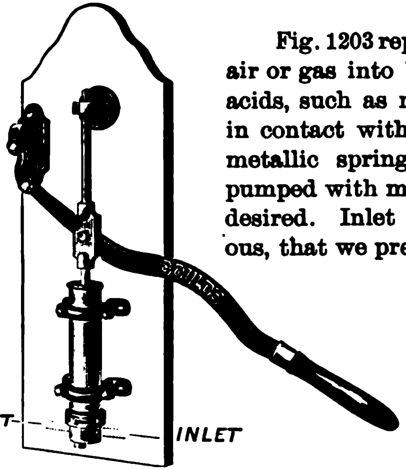


FIG. 1203

Fig. 1203 represents a Brass Air or Vacuum Pump of proper construction for forcing air or gas into barrels, casks or other vessels. In this manner the most destructive acids, such as nitric, sulphuric, etc., may be raised by air pressure without coming in contact with Pump, or in fact anything except conveying pipes. Pump has metallic spring packed plunger, and is so constructed that air or gas may be pumped with minimum loss. It may be used as a pressure or as a vacuum pump, as desired. Inlet and outlet are at the bottom. The uses of an Air Pump are so various, that we prefer to know for what it is to be employed, quantity of air desired, etc.

FIG. 1203. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Displacement per Stroke.	Inlet.	Outlet.	Maximum Pressure.	Cipher.	Price.
0	2 in.	6 in.	22 cubic in.	⅜ in. pipe	⅜ in. pipe	150 lbs.	Glasson	$15.00
000	1½ "	10 "	17 " "	¼ "	¼ "	250 "	Glassub	30.00

GOULDS BRASS PRESSURE OR VACUUM PUMP.

MOUNTED ON PLANK, WITH CRANK SHAFT AND FLY-WHEEL.

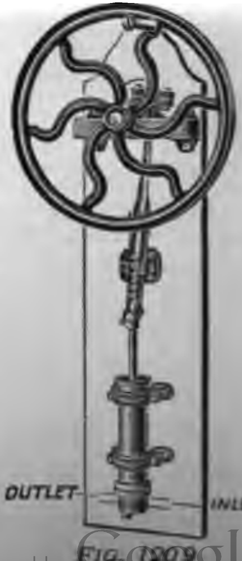


FIG. 1209

Fig. 1209 is substantially the same as Fig. 1203, described above, and adapted for the same purposes. Where any amount of pressure is required, it will be generated much easier with the aid of Crank Shaft or Fly-Wheel than with lever.

We might also say this style of Pump is extensively used for pumping air into beer casks and raising it without aid of other appliances.

FIG. 1209. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Displacement per Stroke.	Inlet.	Outlet.	Maximum Pressure.	Cipher.	Price.
0	2 in.	6 in.	22 cubic in.	⅜ in. pipe	⅜ in. pipe	150 lbs.	Waraho	$28.00
000	1½ "	7 "	17 " "	¼ "	¼ "	250 "	Waraid	43.00

GOULDS AIR PRESSURE OR VACUUM PUMPS.

FOR HAND OR MACHINE POWER.

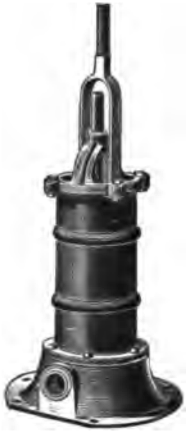


FIG. 605

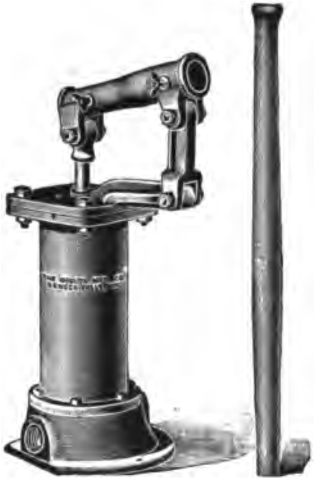


FIG. 1096

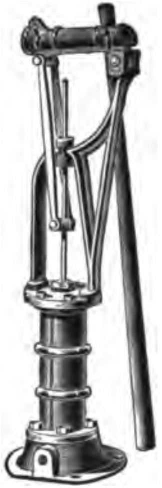


FIG. 772

Air Pumps, shown above, are equally adapted for pumping against pressure or creating vacuum. When ordering, state for which purpose desired. Pumps are made with inside valves, thereby reducing clearances to a minimum.

Fig. 605 is arranged with stub end for power connection. Fig. 772 is similar to Fig. 605, but arranged for hand pumping. Fig. 1096 is hand pump, somewhat lighter and cheaper.

FIG. 605. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Displacement Free Air per Stroke.	Inlet.	Outlet.	Working Pressure.	Cipher.	Price.
16	6 in.	12 in.	339 cubic in.	1¼ in. pipe	1¼ in. pipe	75 lbs.	Moore	$35.00
24	8 "	12 "	600 " "	1½ "	1½ "	75 "	Clubo	45.00

FIG. 1096. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Displacement Free Air per Stroke.	Inlet.	Outlet.	Working Pressure.	Cipher.	Price.
16	6 in.	10 in.	280 cubic in.	1¼ in. pipe	1¼ in. pipe	30 lbs.	Gruhal	$30.00
24	8 "	10 "	500 " "	1½ "	1½ "	30 "	Gruhed	40.00

FIG. 772. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Displacement Free Air per Stroke.	Inlet.	Outlet	Working Pressure.	Cipher.	Price.
16	6 in.	12 in.	339 cubic in.	1¼ in. pipe	1¼ in. pipe	50 lbs.	Viary	$40.00
24	8 "	12 "	600 " "	1½ "	1½ "	50 "	Dashed	50.00

POWER AIR PRESSURE OR VACUUM PUMP.

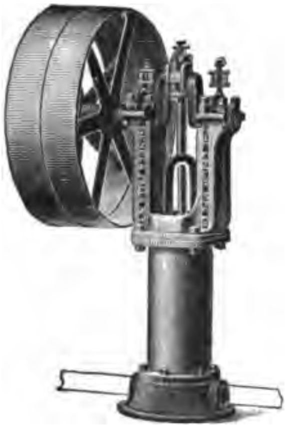


FIG 1029

WITH CRANK SHAFT AND PULLEYS.

Fig. 1029 represents our Air Pressure or Vacuum Pump, with crank shaft, pitman and guide, arranged with tight and loose pulleys for power. Air is received into cylinder through inlet opening in base on the up stroke of piston, and forced out through discharge opening in base on the downward stroke of piston.

These Pumps have a general application for forcing air into receivers, to agitate liquids, and are also used in connection with the dry-pipe sprinkler system in mills and factories. It may also be used for any purpose where a vacuum is required. Maximum speed is 100 R. P. M.

FIG. 1029. SIZE, PRICE, ETC.

PLUNGER.		Displacement Free Air per Rev. of Crank Shaft.	Maximum Pressure.	Inlet and Outlet.	Tight and Loose Pulleys.	Cipher.	Price.
Diameter.	Stroke.						
6 in.	8 in.	226 cubic in.	30 lbs.	1¼ in. pipe	24 x 4 in.	Banjo	$80.00

POWER AIR PRESSURE OR VACUUM PUMP.

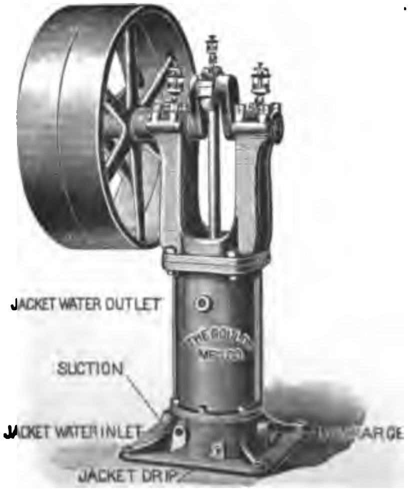


FIG. 1190

WITH WATER-JACKET, CRANK SHAFT AND PULLEYS.

Fig. 1190 shows one of our water-jacketed Air Pressure Pumps arranged with tight and loose pulleys for power. By means of the water-jacket, cold water may be circulated around the cylinder, preventing it from heating when working under heavy, constant pressure The tight or driving pulley is made extra heavy and acts as a fly-wheel, producing uniform action of parts. Piston is metal, ring packed. This Pump is well adapted for high, continuous pressure and from its construction and capacity has a varied range of service. It may be used equally as well for a Vacuum Pump as an Air Compressor. It should always be specified for what purpose it is intended. May be operated at 125 revolutions per minute and 125 pounds pressure.

FIG. 1190. SIZE, PRICE, ETC.

Dia.	Stroke.	Dis. Free Air per Rev. Crank Shaft.	Suction.	Discharge.	Water Jacket Inlet and Outlet.	Tight and Loose Pulleys.	Cipher.	Price.
3 in.	8 in.	56 cu. in.	1 in. pipe	¾ in. pipe	½ in. pipe	24 x 4 in.	Flushun	$100.00

GOULDS AIR PRESSURE AND VACUUM PUMP.

WITH LARGE FLY-WHEEL AND WINCH HANDLE FOR HAND OR POWER USE.

Fig. 1176 shows an Air Pump of considerable capacity. It is provided with heavy balance wheel for hand or belt drive, making its operation easy and uniform. Wheel has two handle bosses, by which the leverage can be varied according to the pressure required. The valves, which are contained within its base, are of brass. Piston is metal, ring packed, so constructed as to automatically take up the wear. Pump is built strong and substantial in every way. Clearances are reduced to a minimum, and it will be found a most effective and satisfactory Pump when used as pressure Pump. Suction is fitted for pipe and Pump will be found equally effective for creating vacuum.

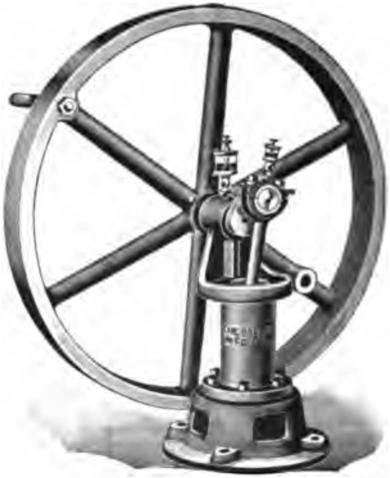

THE GOULDS MFG CO.

FIG. 1176

FIG. 1176. SIZE, PRICE, ETC.

Diameter.	Stroke.	Displacement Free Air per Rev. Crank Shaft.	Maximum Speed.	Maximum Pressure.	Suction and Discharge.	Pulley.	Cipher.	Price.
3 in.	4 in.	28 cubic in.	150 R. P. M.	100 lbs.	½ in. pipe	30 x 3 in.	Flushyx	$55.00

GOULDS AIR PRESSURE AND VACUUM PUMP.

WITH WATER-JACKETED CYLINDER, CRANK SHAFT AND PULLEYS.

Fig. 1193. Air Pump, is modelled on same lines as Fig. 1176, described above, with the addition of water jacket around cylinder and tight and loose pulleys for power. The driving pulley is made extra heavy and serves as a fly-wheel. The water jacket allows a free circulation of cold water around cylinder, keeping it cool and adapting the Pump for continuous, heavy service. Valves are of brass; plunger is metal, ring packed.

When so ordered, we will supply, in place of regular 15 x 3-inch tight and loose pulleys, a 30 x 3-inch balance wheel for either hand or belt drive, and suitable for running from high speed electric motors, etc., at $2.50 extra net.

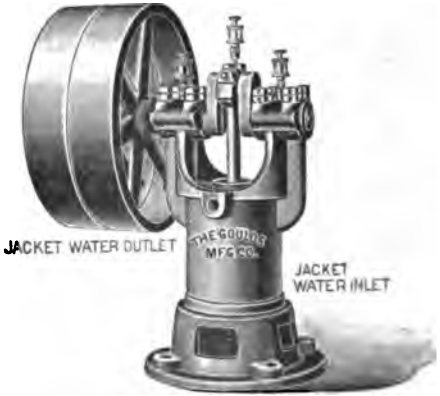


FIG. 1193

FIG. 1193. SIZE, PRICE, ETC.

Diameter.	Stroke.	Displacement Free Air per Rev. Crank Shaft.	Maximum Speed.	Maximum Pressure.	Suction and Discharge.	Water-Jacket Inlet and Outlet.	Pulleys.	Cipher.	Price.
3 in.	4 in.	28 cubic in.	150 R. P. M.	125 lbs.	½ in. pipe	½ in. pipe	15 x 3 in.	Flushwo	$65.00

GOULDS "LIGHTNING" AIR PRESSURE PUMP.

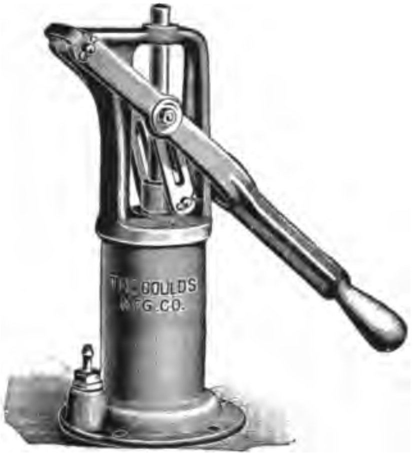


FIG. 1196

FOR HAND USE.

Fig. 1196, "Lightning" Air Pressure Pump, is a modification of our original design, with cylinder and base cast in one solid piece. This construction gives additional strength and absolute assurance against leaky joints. Our form of compound lever affords easy, rapid working, with most effective application of power. We have made a special study to reduce clearances to a minimum, and believe succeeded beyond any other pump in the market. Capacities, prices, etc., as below.

FIG. 1196. SIZE, PRICE, ETC.

Dia. Cyl.	Stroke.	Displacement per Stroke.	Discharge.	Working Pressure.	Cipher.	Price.
3 in.	4 in.	28 cubic in.	⅛-in. hose	50 lbs.	Stilt	$6.00

3½-inch Brass Case Pressure Gauge and Cock	$3.50
⅛-inch C. I. Rubber Tubing, per foot	.10

GOULDS "NEW LIGHTNING" AIR PRESSURE PUMP.

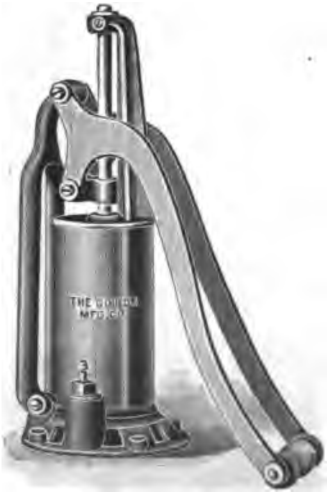


FIG. 1210

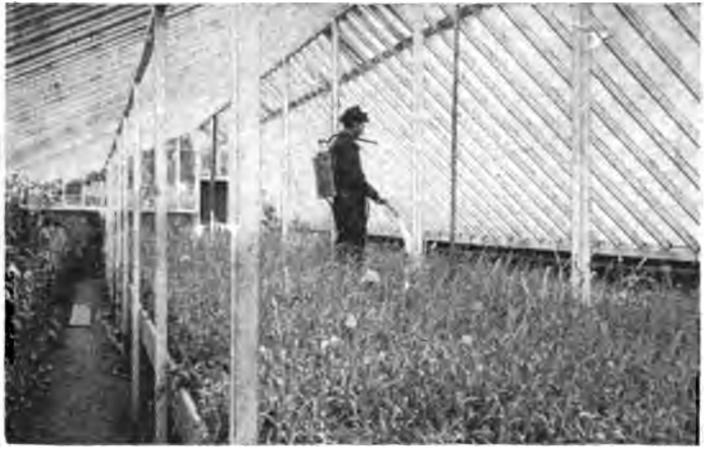
FOR HAND USE.

Fig. 1210, "New Lightning" Air Pressure Pump, is an improved type of our Pumps of this class. The essential features are increased capacity, found in the larger diameter and longer stroke, improved form of piston and valves with reduced clearances; also more powerful leverage The practically perfect cylinder can only be had in the cast body, finished to accurate size. Ours is in one piece with base, to obviate possibility of leakage at this point. The piston and valves are finished with a view of obtaining the highest efficiency. The compound lever is of new form, permitting best possible application of power and rendering the work comparatively easy.

We offer as a strictly high class Pump, designed to meet the demand for the best.

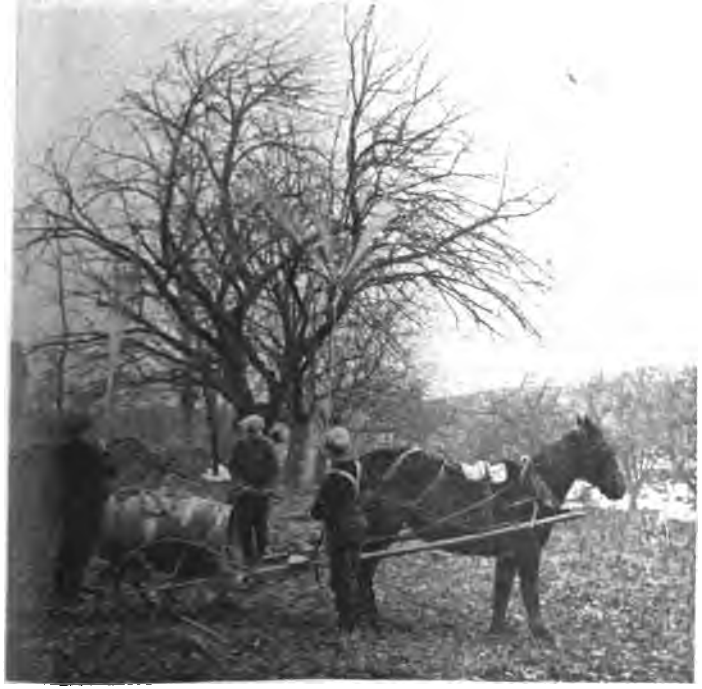
FIG. 1210. SIZE, PRICE, ETC

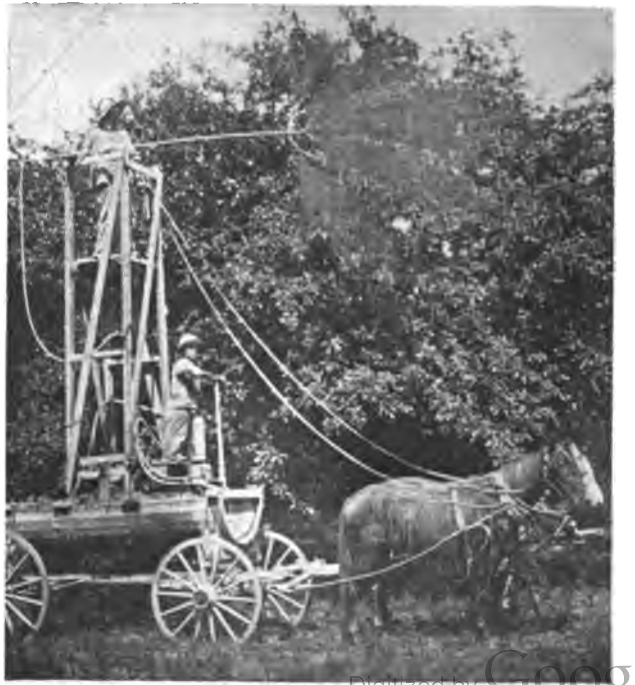
Dia. Cyl.	Stroke.	Displacement per Stroke.	Discharge.	Working Pressure.	Cipher.	[illegible]
3¼ in.	5½ in.	45.6 cubic in.	3-16 in. hose	100 lbs.	Twiddle	[illegible]



SPRING AND SUMMER SPRAYING.

Illustrating
Several Outfits,
in Operation.





GOULDS PORTABLE BRASS FORCE PUMPS.

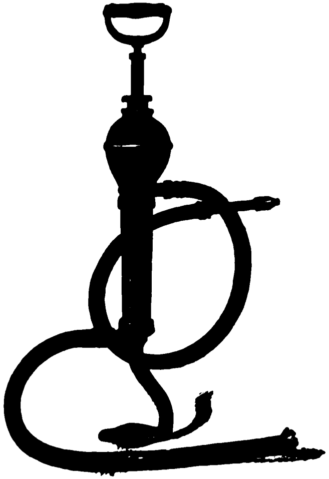


FIG. 561½

Fig. 561½ represents our "Premier" Brass Bucket Pump, arranged with suction and discharge hose and Spray Nozzle. With this Nozzle a solid stream may be thrown, or a fine spray. Pump has brass cylinder, plunger and rod· Pump is particularly adapted for washing windows and wagons, spraying flowers in conservatories, gardens, etc. Its weight is only eight pounds.

FIG. 561½. PRICE.

With 2½ feet ¾-inch suction and 3 feet ⅜-inch discharge hose, Sprav Nozzle and Strainer..........(Velveub) $7.50

Fig. 1129, "Bordeaux" Brass Garden and Spray Pump, is especially designed for spraying in gardens and greenhouses. The Pump is double-acting in effect, has gutta percha ball valves, proof against the action of acids and oils. Foot piece is malleable iron. The pump end of discharge hose is wire wound, adding largely to its durability. Our "Seneca" nozzle is furnished with Pump. Pump has no suction hose, but is set in pail or bucket with foot-rest outside.

FIG. 1129. PRICE.

With 3 feet ⅜-inch discharge hose and Spray Nozzle..........(Wathug) $6.00

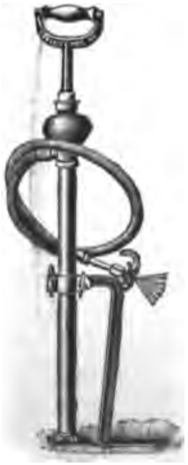


FIG. 1129

Fig. 1068 represents a Brass Spray Pump, Fig. 1129, fitted into a galvanized iron bucket, and thus arranged will be found very convenient for carrying about. Capacity of bucket is between 5 and 6 gallons.

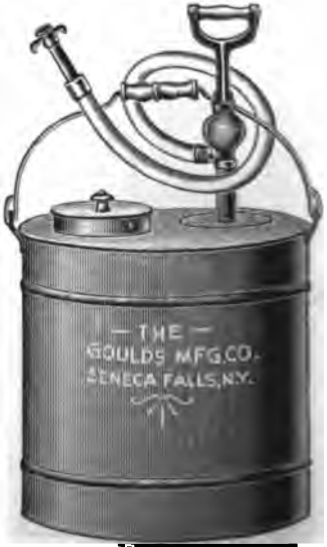

— THE —
GOULDS MFG.CO.
SENECA FALLS, N.Y.

FIG. 1068. PRICE.

With 5 feet of ⅜-inch discharge hose and Spray Nozzle..........(Dripus) $9.00

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

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GOULDS "HANDY" KNAPSACK PUMP.

FOR VINEYARD, ORCHARD OR FIELD SERVICE.

Fig. 989 represents our Knapsack Spray Pump, made entirely of brass and copper, with ball valves and metal plunger, all of which are easily accessible.

The discharge is at the bottom, and the pump can be entirely drained of the liquid. Any leakage of fluid out of the stuffing-box will drip back into the tank. The change from the right to the left hand is simple, and made by disconnecting the bearer link and bringing it over to the jaw, provided for it on the other side.

An eye on the top and back of knapsack enables one to suspend it steadily, when he wishes to take it off his back. It should be carried on back *with the straps crossed in front.* The reservoir is made of heavy copper, and will hold about five gallons of liquid. Special Agitator, 50 cents extra net.

SIZE, PRICE, ETC.

Fig. 989. "Handy" Knapsack Sprayer, complete as shown in cut, with 3½ feet of ⅝-inch discharge hose, "Vermorel" Nozzle and Lance for degorger..(Wrybill) $15.00

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to use," issued annually and furnished upon application.

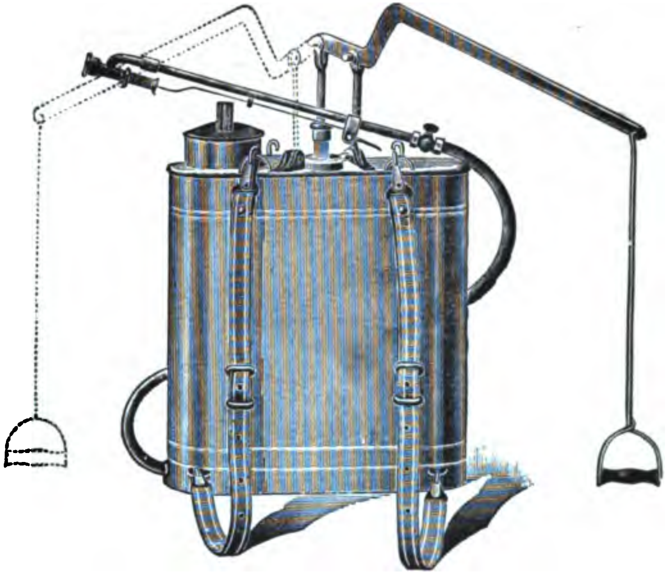

FIG. 989

GOULDS KNAPSACK "KEROWATER."

FOR EMULSIFYING AND SPRAYING KEROSENE AND WATER.

(Patented March 7, 1899.)

Many conditions are encountered, under which our barrel "Kerowater" cannot be advantageously operated, as in greenhouses, work on side hills, etc. For these purposes we have designed our Fig, 1263, Knapsack "Kerowater."

It embodies the same principle as described under Fig. 1187, page 259, and consists of two independent Pumps, operated by a common lever, placed in a galvanized iron tank, with divisions for oil and water. Combined capacity about 5 gallons. Quantity of oil used is controlled by adjustment of a single pin, and may be varied to 5, 10, 15, 20 or 25 per cent. Pump may be operated by either hand, by changing lever to right or left.

FIG. 1263. PRICE, ETC.

Fig. 1263. Knapsack "Kerowater," complete as shown in cut, with 4 feet of ⅝-inch discharge hose, "Seneca" Nozzle and Pipe Extension, 12 inches long..(Zirdfe) $12.00

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

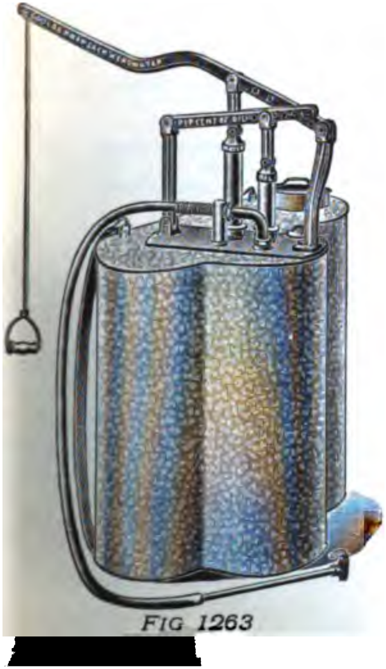

FIG 1263

GOULDS "STANDARD" DOUBLE-ACTING SPRAY PUMP.

WITH BRASS-LINED CYLINDER AND BRASS-CASED DIFFERENTIAL PLUNGER.

Fig. 905 is a strong Double-Acting Spray Pump, with brass-lined cylinder and brass cased differential plunger, specially adapting it for diffusing poisonous mixtures such as Bordeaux, Paris Green, Copper Sulphate, etc., upon the trees, vines and bushes. The differential plunger forms the air chamber and contributes to sustaining a continuous and uniform discharge at spray nozzles. The base is adapted for either end or side of barrel. Lever is extra long and strong. Pump has two discharges cut for pipe, but when ordered without hose or spray nozzles, we plug one opening and fit the other with brass bushing and half coupling for hose. Also supply brass suction strainer. Prices do not include barrel. Pump fitted with metallic lower valve, $1.00 Extra net. For Agitator, see Fig. 1079, page 262. For Nozzles, Extensions, Etc., see pages 263 to 266.

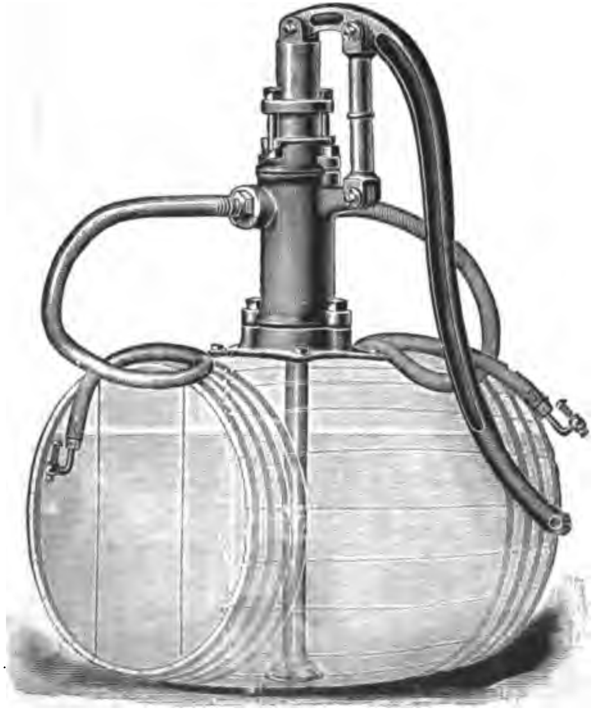

FIG. 905

FIG. 905. SIZES, PRICES, ETC.

	No.	Dia. Outer Cyl.	Suction.	Double Discharge.	Cipher.	Brass-Lined.
Pump with Strainer and Hose Coupling.	2	2½ in.	1 in. pipe	½ in. hose and ¾ in. pipe,	Waspfly	$8.50
	4	3 "	1¼ "	¾ in. hose and 1 in. pipe	Waract	9.50
Outfit A, With One Lead Hose and Nozzle.	Fig. 905. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and one lead of 10 feet, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle. (Wryneck)					13.00
Outfit AA.	Fig. 905. 3-inch Spray Pump fitted in same manner. (Warads)					14.00
Outfit B, With Two Leads Hose and Nozzles.	Fig. 905. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and two leads of 10 feet each, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzles. (Wrythen)					16.50
Outfit BB.	Fig. 905. 3-inch Spray Pump fitted in same manner. (Waraee)					17.50

Special Spray Catalogue, "How to Spray, When to Spray, and What Pumps to Use," issued annually and furnished upon application.

GOULDS "STANDARD" DOUBLE-ACTING SPRAY PUMP.

WITH BRASS-LINED CYLINDER, BRASS-CASED DIFFERENTIAL PLUNGER.

Fig. 905½ shows our Double-Acting Spray Pump with base for attaching to either side or top of barrel. This Pump has brass-lined cylinder, brass-cased differential plunger, and is substantially the same as Fig. 905, described on foregoing page, but has an additional air chamber on spout. In spraying old orchards this is a considerable advantage, as the spray can be discharged to topmost branches. Pump has two discharges cut for pipe, but when ordered without hose and nozzles, we plug one opening and fit the other with brass bushing and half coupling for hose. Also supply brass suction strainer. Prices do not include barrel.

Pump fitted with metallic lower valve, $1.00 extra net.

For agitator, see Fig. 1079, page 262.

For nozzles, extensions, etc., see pages 263 to 266.

FIG. 905½. SIZES, PRICES, ETC.

	No.	Dia. Outer Cyl.	Suction.	Double Discharge.	Cipher.	Brass-Lined.
Pump with Strainer and Hose Coupling.	2	2½ in.	1 in. pipe	½ in. hose and ¾ in. pipe	Zuta	$9.50
	4	3 "	1¼ "	¾ in. hose and 1 in. pipe	Zymfk	10.50
Outfit A, With One Lead Hose and Nozzle.	Fig. 905½. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and one lead of 10 feet ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle.				(Zutex)	14.00
Outfit AA.	Fig. 905½. 3-inch Spray Pump fitted in same manner.				(Zymfis)	15.00
Outfit B, With Two Leads Hose and Nozzles.	Fig. 905½. 2½-inch Spray Pump with 2½ feet 1-inch iron suction pipe with brass strainer and two leads of 10 feet each, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzles.				(Zuto)	17.50
Outfit BB.	Fig. 905½. 3-inch Spray Pump fitted in same manner.				(Zymfma)	18.50

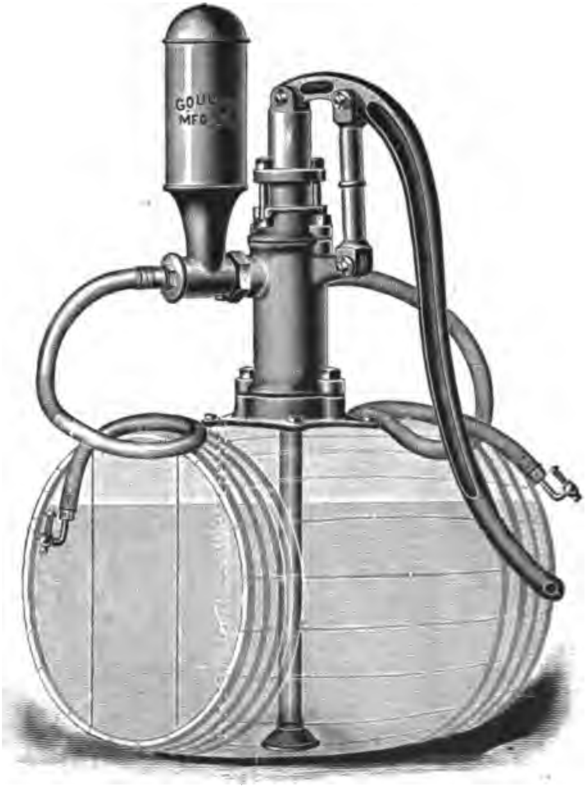

FIG. 905½.

Special Spray Catalogue, "How to Spray, When to Spray, and What Pumps to Use," issued annually and furnished upon application.

GOULDS "FRUITALL" SPRAY PUMP.

WITH AGITATOR. ALL WORKING PARTS BRASS.

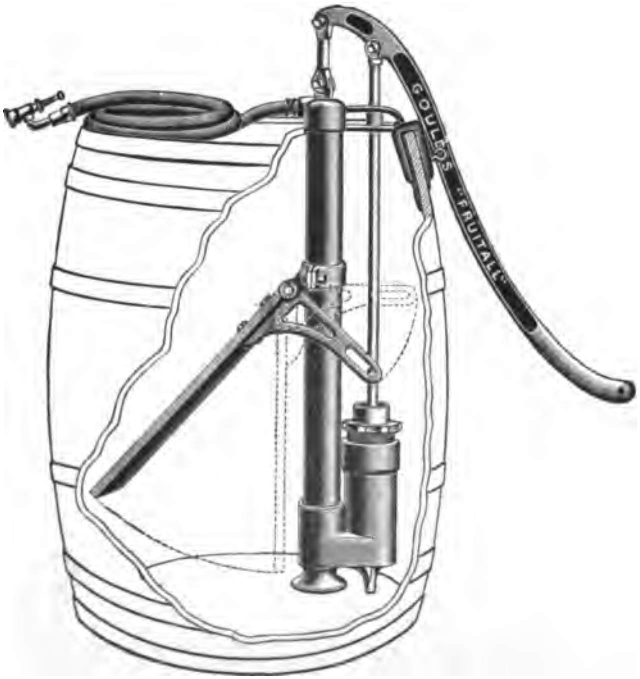

FIG. 1188

Fig. 1188, "Fruitall" Spray Pump, is made on the same general lines as our now famous "Pomona." It is, however, made lighter and of smaller capacity. All working parts, including plunger, gland, valves, valve seats, and strainer, are made of brass. Regularly fitted with double wing paddle agitator, same style as used on "Pomona," and which has proven to be the best type. Pump is held in barrel by anchor at bottom and adjustable clamp at top, fitting over end of stave. Not made for side of barrel. When furnished without agitator, deduct $0.75 from list. We supply barrel, and mount Pump in the same, for *$1.50 extra net.* For Nozzles, Extension, etc., see pages 263 to 266.

FIG. 1188. SIZES, PRICES, ETC.

	Plunger.		Discharge.	Cipher.	Price.
	Dia.	Stroke.			
Pump With Agitator and Hose Coupling.	2 in.	4 in.	½ in. hose	Wumac	$10.00
Outfit A, With One Lead of Hose and Nozzle.	Fig. 1188. Spray Pump with agitator and one lead 10 feet, ½-inch discharge hose, with "Seneca" or (Vermorel) Spray Nozzle. (Wumbe)				13.00
Outfit B, With Two Leads of Hose and Nozzles	Fig. 1188. Spray Pump with agitator and two leads 10 feet each, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle. (Wulli)				15.50

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

GOULDS "POMONA" SPRAY PUMP.

WITH AGITATOR. ALL WORKING PARTS OF BRONZE.

Fig. 1100, "Pomona" Spray Pump, has won for itself an enviable reputation. We unhesitatingly offer it as the best orchard Spray Pump for mounting in barrel. It has great power and capacity. Briefly stated other points of superiority are:

No leather packings, consequently no hardened and useless valves. All working parts bronze, including plunger, gland, valves, valve seats, etc. Plunger is outside packed. Valves are easily accessible. Air chamber is very large and of steel, free from imperfections of cast iron. Lever long and powerful, with adjustable stroke three, four or five inches. The mechanical agitator, as shown in cut, is operated by the stroke of the handle, so whenever any liquid is pumped it is thoroughly agitated. Pump is held securely by small anchor located at the bottom of barrel and by adjustable clamp plate at the top. Our new plate will admit insertion or withdrawal from the barrel without removing agitator.

Pump projects but little above top of barrel, and is not caught by branches.

We furnish Pumps either for end or side of barrel, but always for end unless otherwise ordered. Pump, less agitator, deduct $1.00 from list. We supply barrel and mount Pump in same for $1.50 extra net.

For nozzles, extensions, etc., see pages 263 to 266.

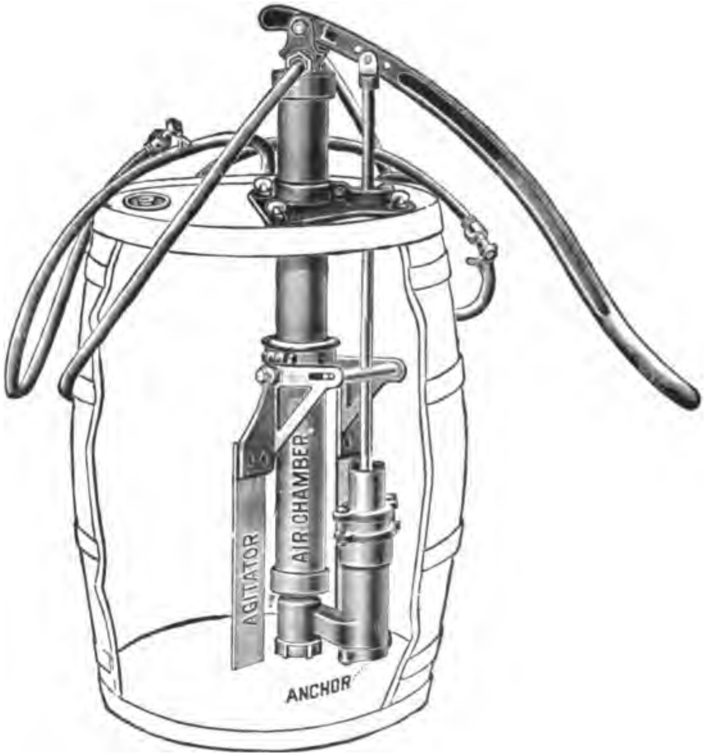

FIG. 1100. AS MOUNTED ON END OF BARREL.

FIG. 1100 SIZES, PRICES, ETC.

	PLUNGER.		Double Discharge.	Cipher.	Price.
	Diameter.	Stroke.			
Pump with Agitator and Hose Coupling.	**2½ in.**	**Adjustable 3, 4 or 5 in.**	**½ in. hose and ¾ in. pipe**	**Wulloi**	**$15.00**
Outfit A, with One Lead Discharge Hose and Nozzle.	**Fig. 1100, Spray Pump, with agitator and one lead 10 feet, ½-inch discharge hose with "Seneca" or "Vermorel" Spray Nozzle.**			**Wullpw**	**18.00**
Outfit B, with two Leads Discharge Hose and Nozzles.	**Fig. 1100, Spray Pump, with agitator and two leads 10 feet each, ½-inch discharge hose, with "Seneca" or "Vermorel" Spray Nozzle.**			**Wullre**	**20.50**

Special Spray Catalogue "How to Spray, When to Spray, and What Pumps to Use," issued annually and furnished upon application.

GOULDS "SENTINEL" DOUBLE-ACTING SPRAY PUMP.

WITH BRASS-LINED CYLINDER, BRASS VALVES, PLUNGER ROD, ETC.

Fig. 963 shows our "Sentinel" Double-Acting Spray Pump, with brass-lined cylinder, brass valves and seats, piston rod, etc., rendering it unaffected by acids, while the extra large air chamber specially adapts it for spraying tall trees. The suction and discharge valves are all grouped in valve chest and are readily accessible by removing air chamber. This Pump supplies the demand for a powerful Spray Pump of sufficient capacity to supply, if necessary, four leads of discharge hose or two leads, each having two, three or four nozzles. In large orchards or groves, such a Pump is a necessity, and our "Sentinel" Pump will be found to answer every requirement. Pump has double suction and discharge openings. Where ordered without hose or spray nozzles, we plug one suction and fit the other with brass bushing and half coupling for 1¼-inch hose; also fit two discharges with bushings and half couplings for ½-inch hose. Brass "Y's" or Siamese connections, to give two and four leads of hose, extra, as given on page 265. For agitators, nozzles, extensions and fittings, see pages 262 to 266. Regular air chamber is 5 x 21½ inches. *When so ordered*, we supply with 6 x 30-inch air chamber, in place of our regular one, at $3.50 additional list.

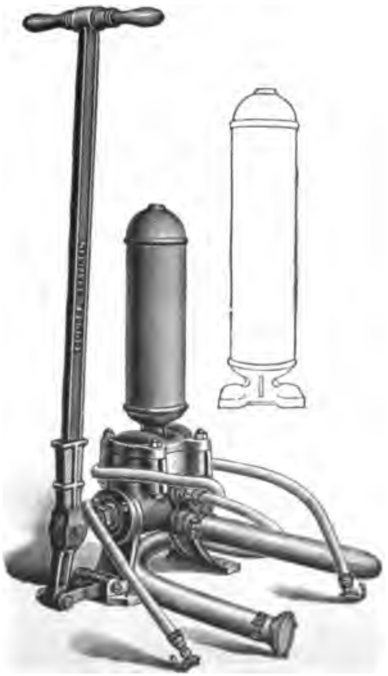

FIG. 963

FIG. 963. SIZES, PRICES, ETC.

	Dia. Cyl.	Suction.	Double Discharge.	Cipher.	Price.
Pump with Strainer and Hose Couplings.	**3 in.**	**1¼ in. hose**	**½ in. hose**	**Woolen**	**$28.50**
Outfit A.	**Fig. 963. "Sentinel" Spray-Pump, with 5 feet 1¼-inch rubber suction hose and two leads, 25 feet each, ½-inch discharge hose with "Seneca" (or other) spray nozzles, couplings and hose bands, complete. (Duslap)**				**$45.50**
Outfit B.	**Fig. 963. "Sentinel" Spray Pump, with 5 feet, 1¼-inch rubber suction hose and four leads, 25 feet each, ½-inch discharge hose with "Seneca" (or other) spray nozzles, couplings and hose bands, complete. (Dunled)**				**$60.50**

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

GOULDS "KEROWATER" SPRAY PUMP.

FOR EMULSIFYING AND SPRAYING OIL AND WATER

(Patented March 7, 1899.)

Fig. 1187, "Kerowater" Spray Pump, is designed for mechanically mixing and spraying kerosene and water or crude petroleum and water. The oil and water are so thoroughly mixed and blended that the discharge from the nozzle is a milk-like emulsion. Either 5, 10, 15, 20, or 25 per cent. oil can be used.

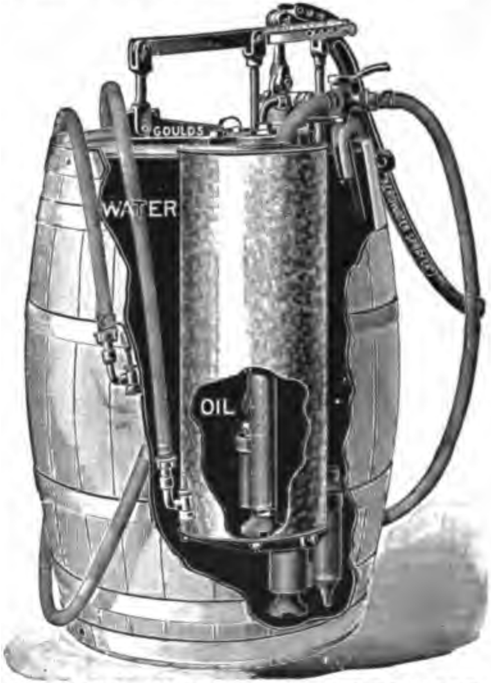

FIG. 1187. WITH TWO LEADS OF HOSE.

Construction is simple. As shown by engraving, a galvanized iron tank, containing oil, goes inside of a barrel, containing water. Inside of oil tank is a small Pump, and outside of oil tank is another Pump, similar in design, but larger. Both Pumps are operated by one common lever, and while one draws oil from the oil tank, the other draws water from the surrounding barrel. They both discharge at a common point, where the water and oil are blended.

Percentage of oil is varied by changing a pin in the head of lever, which shortens or lengthens the stroke of oil Pump. Pump is a positive measuring device and delivers exact percentages of oil. Outfit is readily removed from barrel. Oil tank and Pump can be removed and the water Pump used for general spraying with Bordeaux Mixture, etc.

Water Pump is similar to Fig. 1188, page 256, and at 75 cents extra list we can supply Agitator, as there shown.

Notice that prices below include the barrel and double brass shut-off.

FIG. 1187. SIZE, PRICES, ETC.

	Water Plunger.		Discharge.	Cipher.	Price.
	Diameter.	Stroke.			
Double Pump Complete. Mounted in Barrel and Fitted with Brass Double Shut-off and Two Half Hose Couplings. (No Hose or Nozzles.)	2 in.	4 in.	½ in. hose	Zymga	$21.00
Outfit A. With One Lead Hose and Nozzle.	Fig. 1187, "Kerewater," with one lead 10 feet, ½-inch discharge hose, with "Seneca" (or Vormorel) Spray Nozzle. Mounted in barrel and supplied with double shut-off (Fig. 1186) and extra half hose coupling.			Zymhe	23.75
Outfit B. With Two Leads Hose and Nozzles.	Fig. 1187, "Kerewater," with two leads 10 feet each, ½-inch discharge hose with "Seneca" (or Vormorel) Spray Nozzle. Mounted in barrel and supplied with double shut-off (Fig. 1186.)			Zymhat	26.50

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

GOULDS LARGE "KEROWATER" SPRAY PUMP.

MOUNTED ON TRIPOD.

(Patented March 7, 1899.)

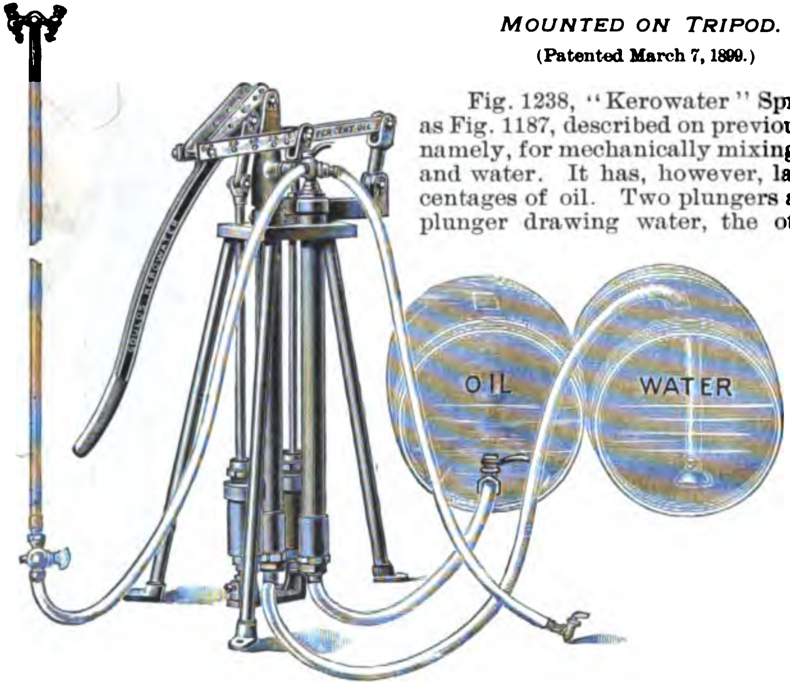

FIG. 1238

Fig. 1238, "Kerowater" Spray Pump, is designed upon same principals as Fig. 1187, described on previous page, and is offered for the same service: namely, for mechanically mixing and spraying kerosene or crude petroleum and water. It has, however, larger capacity, and will handle larger percentages of oil. Two plungers are operated by a common lever—the one plunger drawing water, the other kerosene, and both delivering at a common point where the water and oil are thoroughly mixed and blended. The emulsion can be made either 15, 25, 40, 50 or 60 per cent. oil, as desired. This is accomplished by setting the pin in the head of lever in the hole marked with the percentage desired. This shortens or lengthens the stroke of the oil pump.

Fig. 1238 is also as good a Pump for handling Bordeaux, or any other spraying liquid, as could be had. For such use one plunger rod can be disconnected, or suction for both pumps taken from one tank.

It is simple in construction, powerful, and of large capacity.

For nozzles, extension pipes, etc., see pages 263 to 266.

FIG. 1238. SIZE, PRICE, ETC.

	Plungers.		Discharge.	Cipher.	Price.
	Diameter.	Stroke.			
Pump Mounted on Tripod with Brass Strainer and Barrel Attachment, also Double Discharge Shut-Off and Hose Couplings.	**Both 2 in.**	**Water Plunger, 4 in.** **Oil Plunger, Variable**	**For ½ in. hose**	**Zymhfd**	**$22.50**
Outfit A,	**Fitted with one 10 foot lead of ¾-inch suction hose, with brass strainer and one short lead of special oil hose with barrel attachment; also double discharge shut-off (Fig. 1186), and *one* 10 foot lead of ½-inch discharge hose with double "Seneca" nozzle and extra half hose coupling.**			**Zymud**	**30.00**
Outfit B,	**Fitted with one 10 foot lead of ¾-inch suction hose, with brass strainer and one short lead of special oil hose with barrel attachment; also double discharge shut-off (Fig. 1186), and *two* leads 10 foot each ½-inch discharge hose, each with "Seneca" Nozzle.**			**Zymox**	**35.00**

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GOULDS BARREL SPRAY CARTS.

WITH OR WITHOUT SPRAY PUMP.

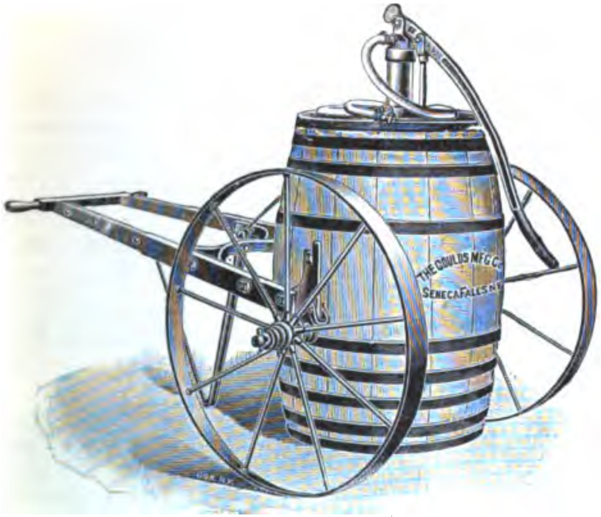

FIG. 1266

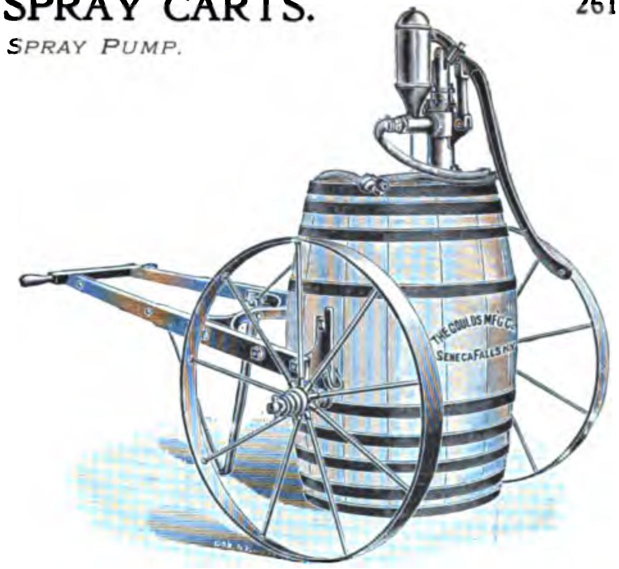

FIG. 1012

Fig. 1012, Barrel Spray Cart, is made in most substantial manner. Truck has iron wheels, with 2½-inch tires. Truck may be withdrawn from barrel by simply elevating the handles. Outfit will be found very handy and serviceable about orchard and garden. We list with or without Fig. 905½, Spray Pump, fully described on page 255. Fig. 1266 is same Cart, fitted with our Fig. 1100, "Pomona" Spray Pump, fully described on page 257.

FIG. 1266. OUTFITS AND PRICES.

		Cipher.	Price.
Outfit A, With One Lead Hose and Nozzle.	**Barrel Cart Complete with Fig 1100. Spray Pump with agitator and one lead 10 feet, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzle.**	**Zirdgo**	**$31.50**
Outfit B, With Two Leads Hose and Nozzles.	**Barrel Cart Complete with Fig 1100. Spray Pump with agitator, and two leads 10 feet, each. ½-inch discharge hose, with Seneca" (or Vermorel) Spray Nozzles**	**Zirdhy**	**34.00**

FIG. 1012. OUTFITS AND PRICES.

		Cipher.	Price.
Barrel Cart Without Pump.	**Running Gear Only or Cart with barrel irons; no pump or barrel.**	**Ebbing**	**$15.00**
Outfit A, With One Lead Hose and Nozzle.	**Barrel Cart Complete with Fig. 905½, 2½-inch Spray Pump with 2½ feet 1 inch iron suction pipe, with brass strainer, and one lead 10 feet, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzel.**	**Edenic**	**32.00**
Outfit AA.	**Barrel Cart Complete with Fig. 905½. 3-inch Spray Pump fitted in same manner.**	**Edisa**	**33.00**
Outfit B, With Two Leads Hose and Nozzles.	**Barrel Cart Complete with Fig. 905½. 2½-inch Spray Pump with 2½ feet 1 inch iron suction pipe, with brass strainer, and two leads 10 feet each, ½-inch discharge hose, with "Seneca" (or Vermorel) Spray Nozzles.**	**Editor**	**35.50**
Outfit BB.	**Barrel Cart Complete with Fig. 905½. 3-inch Spray Pump fitted in same manner.**	**Edisil**	**36.50**

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished on application.

GOULDS SPRAY PUMP AGITATORS.

FOR USE WITH OUR STANDARD SPRAY PUMPS.

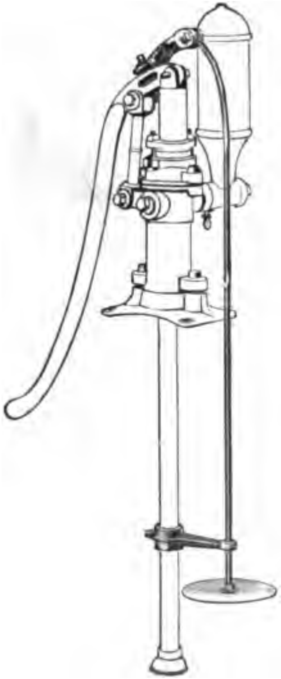

FIG 1079

Fig. 1079, Dash Agitator, consists of a clamp, which fastens onto the head of lever of our "Standard" Spray Pumps (Figs. 905 and 905½), and a rod, running through guide on suction pipe, and connected to a brass plate at bottom, which is operated by movement of the lever.

Fig. 1079, Dash Agitator with Brass Disc.......................... (Wullmo) $1.25

Fig. 1102, Independent Revolving Agitator, illustrated on this page, offers advantages over anything yet devised. Power is transmitted through a small pair of bevel gears to a paddle wheel, comprising four arms set at such an angle that, as the wheel revolves, the liquid is carried both around and upwards in the barrel, thus insuring thorough agitation of the entire contents of the barrel. Used in connection with any of our Spray Pumps where barrel or tank is required.

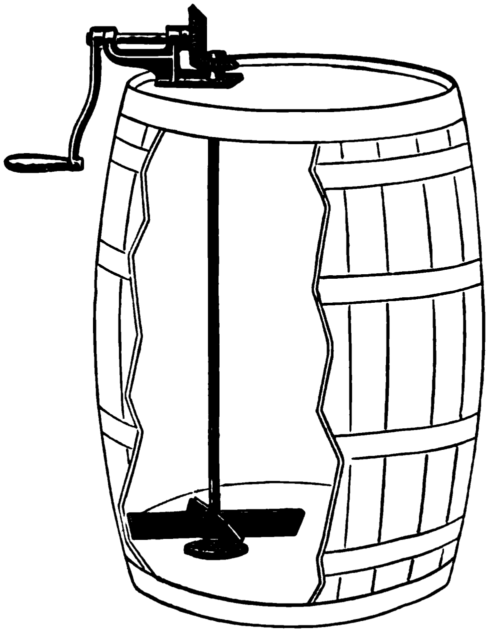

FIG. 1102

Fig. 1102. Goulds Revolving Agitator, Complete (No Barrel)..(Wullny) $5.00

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"VERMOREL" SPRAY NOZZLE, WITH DEGORGER.

Fig. 55, "Vermorel" Spray Nozzle with Degorger, affords a conical discharge, adapting it for close range spraying of vines, trees, etc. The liquid is forced through an eddy chamber and discharge cap. We construct this Nozzle in two sections, making it possible of being taken apart and cleaned. The one-piece nozzle, when plugged, is worthless. It has a stuffing box, which prevents leakage. It is readily cleaned in operation by pulling or pressing the Degorger against limb of tree, or pressing with thumb.

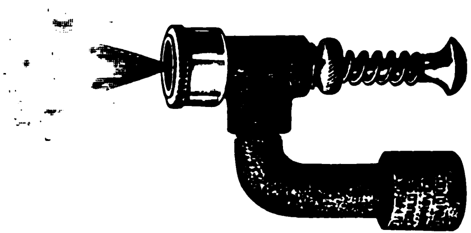


FIG. 55.

Fig. 55, cut for ¼-inch pipe	(Zoide)	$1.00
Fig. 55, including hose connection (Fig. 65 or 67, page 265)	(Rabijx)	1.25

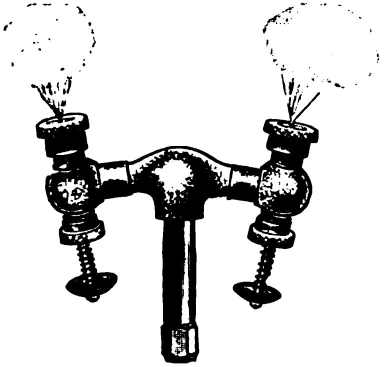


FIG. 1103

TWO-DISCHARGE "VERMOREL" NOZZLE, WITH DEGORGERS.

Fig. 1103, Two-Discharge "Vermorel" Nozzle, covers twice the surface sprayed by the single nozzle and with equal thoroughness. It has become very popular.

Fig. 1103, cut for ¼-inch pipe	(Zugdan)	$2.00
Fig. 1103, including hose connection (Fig. 65 or 67, page 265)	(Rabiks)	2.25

THREE-DISCHARGE "VERMOREL" NOZZLE, WITH DEGORGERS

Fig. 1104 illustrates our Three-Discharge "Vermorel" Nozzle. The advantage of this Nozzle will readily be appreciated where a large amount of spraying is to be done.

Fig. 1104, cut for ¼-inch pipe	(Zugded)	$2.75
Fig. 1104, including hose connection (Fig. 5 or 67, page 265)	(Rablim)	3.00

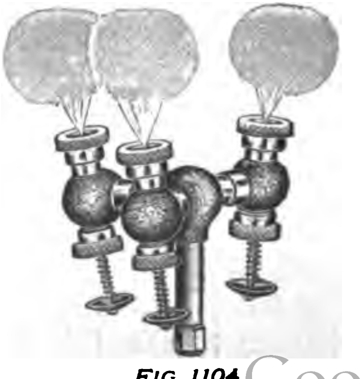


FIG. 1104

GOULDS SPRAY NOZZLES.

"SENECA" SPRAY NOZZLE.

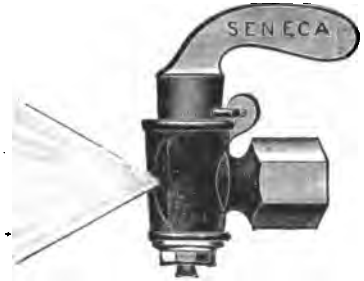


FIG. 81

Fig. 81, "Seneca" Spray Nozzle, gives a very wide spray, covering a great area. By means of a small adjusting screw the discharge can be nicely graduated, as required, and remains fixed, no matter how often the nozzle may be opened or closed. The nozzle may be cleaned by turning plug across the opening. The discharge is fan shaped. With this class of nozzles, the discharge can be instantly shut off, when not required, thus preventing waste of liquid and loss of labor. Recommend for orchard work.

Fig. 81, cut for ¼-inch pipe	(Zugbor)	$1.00
Fig. 81, including hose connection (Fig. 65 or 67, page 265)	(Rabiges)	1.25

"MASSON" SPRAY NOZZLE.

Fig 62, "Masson" Spray Nozzle, we offer where extremely fine spray is desired. It may be briefly described as an all-bronze plug cock, constructed to give a fan-shaped discharge at an angle. By simply turning the small "T" handle, the discharge may be graduated from a mist-like spray (consuming only one gallon of liquid in fifteen minutes), to as coarse a spray as may be desired to use With this class of nozzles, the discharge can be instantly shut off, when not required, thus preventing waste of liquid and loss of labor. It is cleaned by turning plug across the opening.

Fig. 62, cut for ¼-inch pipe	(Zufva)	$1.00
Fig. 62, including hose connection (Fig. 65 or 67, page 265)	(Rabihe)	1.25

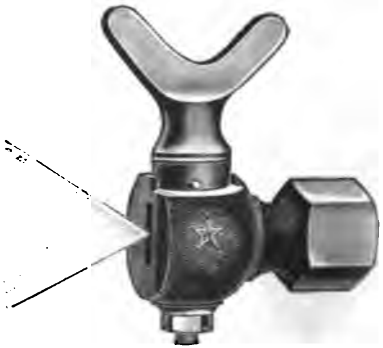


FIG. 62

"CALLA" SPRAY NOZZLE.

Fig. 69, "Calla" Spray Nozzle, can change from solid stream to fine or coarse spray by adjustment of slide contained in the cap of nozzle. Unless otherwise ordered, Fig. 69 is arranged for wireing into ½-inch hose. Can be supplied cut for ¼-inch pipe, when so ordered.

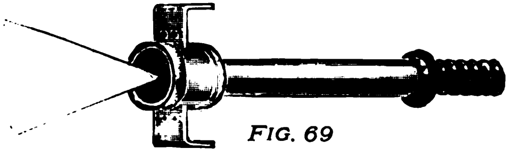


FIG. 69

Fig. 69½ is nozzle same as Fig. 69, except that it is cut to fit ½ or ¾-inch male half hose coupling.

Fig. 69	(Vigonia)	$0.50
Fig. 69½	(Vigonje)	.50

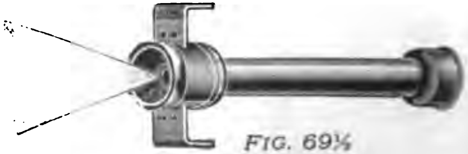


FIG. 69½

"CYCLONE" SPRAY NOZZLES

Fig. 51, "Cyclone" Spray Nozzle, gives spray similar in form to that of the "Vermorel." Unlike "Vermorel," the "Cyclone" has no "Degorger." Fig. 52, "Pacific Cyclone" differs from Fig. 51 only in that it has end discharge. Both are cut for ¼-inch pipe; to fit for hose, requires either Fig. 65 or Fig. 67 (page 265), which cost extra.

Fig. 51, cut for ¼-inch pipe	(Zonard)	$0.50
Fig. 52, cut for ¼-inch pipe	(Zonate)	.50

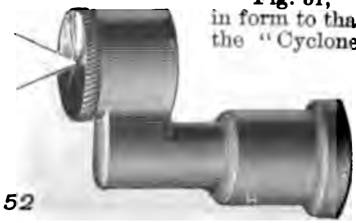


FIG. 52

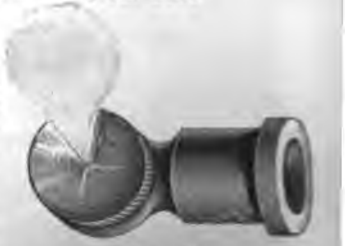


FIG. 51

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

GOULDS SPRAY PUMP FITTINGS.

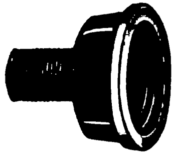


FIG. 65

Fig. 65, Coupling, has small end cut ¼-inch pipe thread to fit our spray nozzles, and large end cut to fit ½ or ¾-inch male half-hose coupling.

Fig. 65..(Zornis) $0.25

Fig. 67, Coupling, has one end cut ¼-inch pipe thread to fit our Spray Nozzles, and other end is turned to wire into ½-inch hose (or ⅜-inch *if so ordered*).

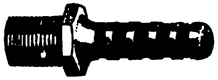


FIG. 67

Fig. 67..(Zornod) $0.25

Fig. 85, Brass Stop Cock, is designed to be used with any of our Spray Pumps, to shut off spray quickly and save loss of liquid. It has shank for attaching ½-inch discharge hose, and ¼-inch male pipe thread to attach spray nozzle or extension.

Fig. 85, as above (Zorned) $0.65

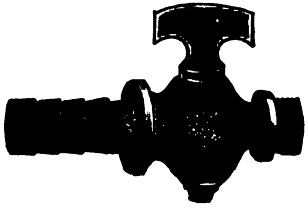


FIG. 85

Fig. 1074, Brass "Y," designed so that two nozzles can be used with one lead of hose, is tapped to fit ¼-inch pipe at butt, which also adapts it to fit our Fig. 65, Coupling, for hose or iron pipe. Any of our various nozzles can be screwed on the branches.

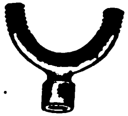


FIG. 1074

Fig. 1074, Brass "Y"..(Elysign) $0.50

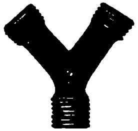


FIG. 49

Fig. 49, Brass "Y," is cut ¾-inch male thread on inlet (1-inch *if so ordered*), and ½ or ¾-inch male thread on lateral discharges. Fig. 49½, Brass "Y," is the same in all respects as Fig. 49, described above, except it has female thread on inlet. Lateral discharge same as noted. While it may be employed with any of our Pumps, it is specially designed to be used with Fig. 963, "Sentinel" Spray Pump.

Fig. 49, as above	**(Zenava)**	**$0.80**
Fig. 49½, as above	**(Zormad)**	**$0.80**

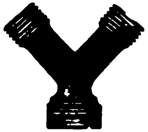


FIG. 49½

Fig. 70, Brass Suction Pipe Strainer, is fitted for *hose* as follows:

Price, ¾ in	**(Rabigan)**	**$0.50**
Price, 1 in	**(Zonawl)**	**$0.50**
Price, 1¼ in	**(Zorlun)**	**$1.00**

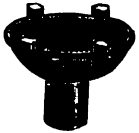


FIG. 70

Fig. 71, Brass Suction Pipe Strainer, is fitted for *wrought iron pipe* as follows:

Price, 1 in..(Zorlyd) $0.50

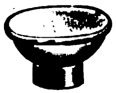


FIG. 71

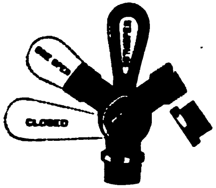


FIG. 1186

Fig. 1186, Brass "Y" Discharge and Shut-Off, is to be used with any of our larger Spray Pumps, where one or two leads of hose are to be employed. Either, or both of the discharges may be opened or closed at will, as shown in the illustration Butt is threaded to fit pump, lateral discharges threaded to fit ½-inch or ¾-inch hose coupling.

Price..(Zymfyo) $2.00

Fig. 1092, Brass Shut-Off Discharge Connection, can be used with any of our Barrel Spray Pumps to control the discharge at the pump. One end is cut to fit the pump, the other threaded for ½ or ¾-inch hose coupling.

Price..(Zymfzm) $1.50

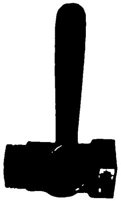


FIG. 1092

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application

SPRAY PUMP EXTENSIONS AND ATTACHMENTS.

FOR ORCHARD AND GARDEN USE.

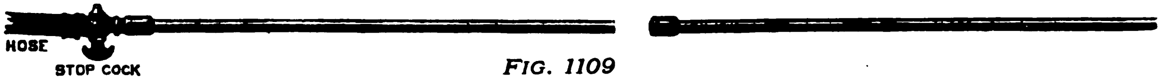


FIG. 1109

Fig. 1109, Extension, consists of 8 feet of ¼-inch iron or brass pipe, with brass stop cock fitted for ½-inch hose. With this arrangement the taller trees may be sprayed and the work among the branches facilitated. Extension is threaded to fit any of our nozzles and may be used in connection with any of our Spray Pumps.

Fig. 1109, Iron pipe, complete with cock	(Zukvd)	$1.25
Fig. 1109, Brass pipe, complete with cock	(Zukvs)	4.00

FIG. 48

Fig. 48, Bamboo Extension, has 8 feet of iron or brass pipe inside of bamboo, making an easy and pleasant extension to handle. Has stop cock fitted for ½ or ¾-inch hose. Other end cut ¼-inch pipe thread to fit our spray nozzles.

Fig. 48, complete as above, with iron pipe inside	(Zonals)	$3.00
Fig. 48, complete as above, with brass pipe inside	(Zirdic)	6.00

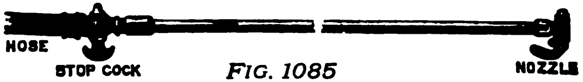


FIG. 1085

Fig. 1085 is Fig. 1109, Extension Pipe, described above, with Fig. 81, "Seneca" Nozzle.

Fig. 1085, complete with iron extension pipe	(Zuln)	$2.50
Fig. 1085, complete with brass extension pipe	(Zujk)	5.00

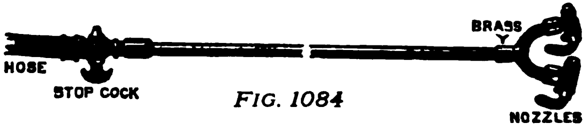


FIG. 1084

Fig. 1084 is Fig. 1109, Extension Pipe, described above, with Brass "Y" and two Fig. 81, "Seneca," Nozzles.

Fig. 1084. complete with iron extension pipe	(Zuko)	$4.00
Fig. 1084, complete with brass extension pipe	(Zukug)	6.50

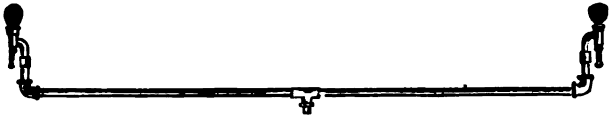


FIG. 1131

Fig. 1131, Two-Row Attachment, for spraying potatoes, etc., with a knapsack Pump, has two "Vermorel" nozzles. Total length is 30 inches.

Fig. 1131, as per cut	(Whelqt)	$3.50

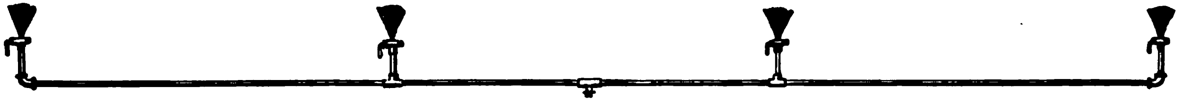


FIG. 1132

The above cut represents an attachment for spraying four rows of potatoes with any of our larger Spray Pumps. It has four "Seneca" Nozzles ("Vermorel" nozzles supplied at same price *if so ordered*) and connections for hose. Total length nine feet.

Fig. 1132, as per cut	(Whelro)	$7.00

Special Spray Catalogue, "How to Spray, When to Spray and What Pumps to Use," issued annually and furnished upon application.

HAND, GARDEN AND FIRE ENGINES.

Hand, Garden and Fire Engines have a general use in gardens and about lawns for sprinkling. The larger machines have been successfully used for spraying shade trees where smaller pumps are useless. With available water supply, Hand Fire Engines will answer a good purpose for emergency.

This line will be found between pages 268 and 276.

GOULDS GARDEN OR FIRE ENGINE.

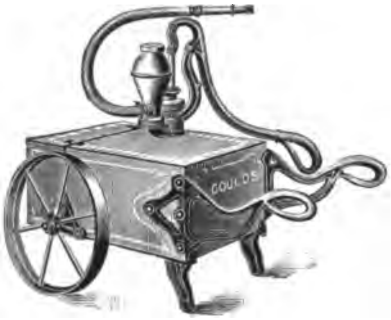


FIG. 304

Fig. 304 represents our Garden Engine, with either wood or iron handles, as ordered. The Pump is placed inside of box, of dimensions suitably large to hold about a barrel of water, and, being on wheels, is easily moved to any place where it is desirable to use it. Pump has brass-cased rod, revolving bearer top and extra long handle, which gives a powerful leverage.

Below we give prices on this Engine, complete as per cut, with three feet of one-inch discharge hose and a discharge pipe.

We can also line box with sheet lead, at extra net charge of $5.00, or with galvanized iron at an extra net charge of $3.00, rendering it unaffected by swelling or shrinking of the wood.

FIG. 304. SIZE, PRICES, ETC.

	Dia. Pump. Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Cipher.	Price.
With Iron Handles...	3 in.	6 in.	.18 gal.	1½ in.	1 in. hose	Driven	$26.00
With Wood Handles..	3 "	6 "	.18 "	1½ "	1 "	Drolly	25.00

GOULDS GARDEN OR FIRE ENGINE, SIDE SUCTION.

Fig. 309 is very similar to Fig. 304, except that Pump is arranged to take suction either from the tank or through suction hose, which can be attached at side of tank, as shown in cut. When suction hose is attached, the cap, removed from outer suction opening, is placed over the suction opening inside the tank. Fitted in this manner, Engine can be moved to any convenient point for draughting water.

Below we give prices on Engine with 3 feet of 1-inch discharge hose and brass discharge pipe. No suction hose is included, but can furnish as ordered at market rates.

We can also line this box with sheet lead at an extra net charge of $5.00, or with galvanized iron at an extra net charge of $3.00, rendering it unaffected by swelling or shrinking of the wood.

Longer lengths of hose furnished, if ordered, at extra price. See pages 301 to 307 for lists of Hose, Couplings, etc.

FIG. 309. SIZE, PRICES, ETC.

	Dia. Pump Cyl.	Stroke.	Capacity per Stroke.	Suction.	Discharge.	Cipher.	Price.
With Iron Handles ...	3 in.	6 in.	.18 gal.	1½ in. hose	1 in. hose	Drown	$29.00
With Wood Handles..	3 "	6 "	.18 "	1½ "	1 "	Drug	28.00

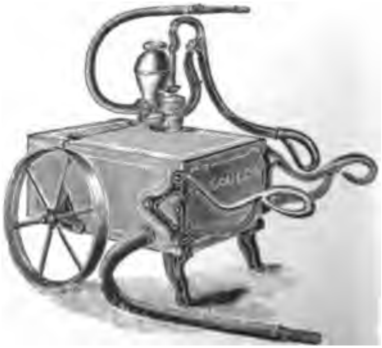


FIG. 309

GOULDS DOUBLE-ACTING GARDEN OR FIRE ENGINE.

BRASS-LINED CYLINDER, MOUNTED ON WROUGHT-IRON BARROW.

Fig 630 shows a portable Double-Acting Lift and Force Pump. The cylinder is iron, brass-lined. Four to six men can operate the Engine at one time. It will throw a fine stream through a half-inch nozzle from 80 to 100 feet.

One bolt and nut holds in place a door at either end of base, which can be opened to get at the rubber ball valves.

Below we give price of Engine complete as per cut, with 6 feet 2-inch spiral suction hose and 12 feet 1½-inch discharge hose, brass hose pipe and spreader, hose couplings, suction basket, etc.

Longer lengths of hose can be furnished, if desired, at extra price. See pages 304 to 307 for lists of Hose, Couplings, etc.

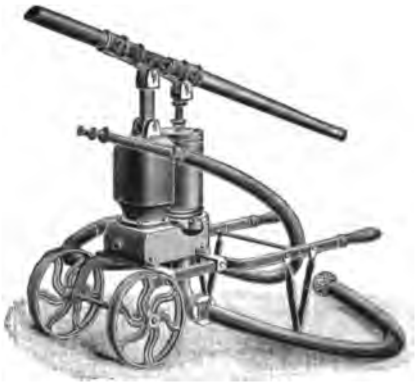


FIG. 630

FIG. 630. SIZE, PRICE, ETC.

Diameter Cylinder.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	Cipher.	Brass-Lined With Hose, Etc., as Above.
5 in.	8 in.	1.36 gals.	2 in. hose	1½ in. hose	Racer	$62.00

GOULDS DOUBLE-ACTING GARDEN OR FIRE ENGINE.

BRASS-LINED CYLINDER AND WROUGHT-IRON EXTENSION LEVERS.

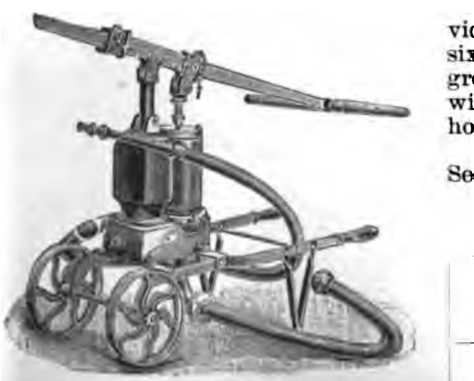


FIG. 653

This is the same Engine as described above, except that this is provided with wrought-iron, adjustable arms with wood brakes, on which six to eight men can work, and is consequently capable of performing greater service. Below we give price of Engine complete as per cut, with 6 feet 2-inch spiral suction hose and 12 feet 1½-inch discharge hose, brass hose pipe and spreader, hose couplings, suction baskets, etc.

Longer lengths of hose can be furnished, if desired, at extra price. See pages 304 to 307 for lists of Hose, Couplings, etc.

FIG. 653. SIZE, PRICE, ETC.

Diameter Cylinder.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	Cipher.	Brass-Lined With Hose, Etc., as Above.
5 in.	8 in.	1.36 gals.	2 in. hose	1½ in. hose	Ravelus	$64.00

GOULDS DOUBLE-ACTING GARDEN OR FIRE ENGINE.

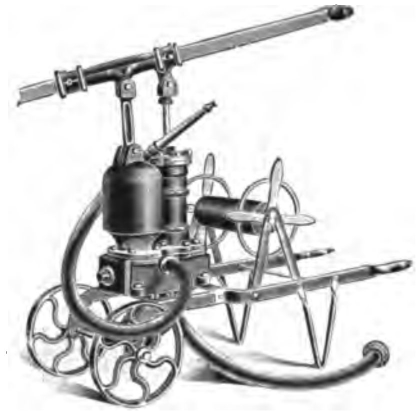


FIG. 1008½

WITH WROUGHT-IRON BARROW AND REEL FOR HOSE.

Fig. 1008½ represents our Double-Acting Garden or Fire Engine, on wrought-iron barrow, with wheels and hose reel. It has brass-lined cylinder and rubber ball valves. Four to six men can operate the Engine to good effect. Hose reel will carry 50 to 75 feet of 1½-inch three-ply rubber hose. We list Engine complete, as per cut, with 6 feet 2-inch spiral suction hose, and 12 feet 1½-inch discharge hose; brass hose pipe, sprinkler, hose coupling and suction basket. Larger lengths of hose can be furnished, if desired, at extra price. See pages 304 to 307 for hose couplings, etc.

FIG. 1008½. SIZES, PRICES, ETC.

Diameter Cylinder	Stroke.	Capacity per Rev.	Suction.	Discharge.	Cipher.	Brass-Lined, with Hose, Etc., as Above.
5 in.	8 in.	1.36 gal.	2 in. hose	1½ in. hose	Baldrick	$75.00

GOULDS UNION HAND FIRE ENGINE.

Fig. 766 represents our Fig. 284, Two-Cylinder Force Pump, mounted upon substantial truck. The tank is made of the best galvanized wrought-iron and sits on a very heavy and strongly bolted wood frame. It can be operated by from two to six men, and will draw from the tank or through suction hose from any other supply. When suction hose is attached, the cap, removed from suction opening outside of the tank, is placed over suction opening inside the tank. The knees are so constructed that they will fold up while being moved, and when in place hold the Engine firmly on the ground when in operation. Below we give price on Engine complete. No suction or discharge hose is included in these prices, but we can furnish same at lowest market rates.

FIG. 766. SIZES, PRICES, ETC.

Dia. Cyl.	Stroke	Capacity per Rev.	Suction.	Discharge.	Brass-Lined Cylinder.		Brass Cylinder.	
					Cipher.	Price.	Cipher.	Price.
4 in.	6 in.	.65 gal.	2½ in. hose	1½ in. hose	Vixane	$110.00	Vixind	$125.00

See pages 304 to 307 for lists of Hose, Couplings, Discharge Pipes, Strainers, etc.

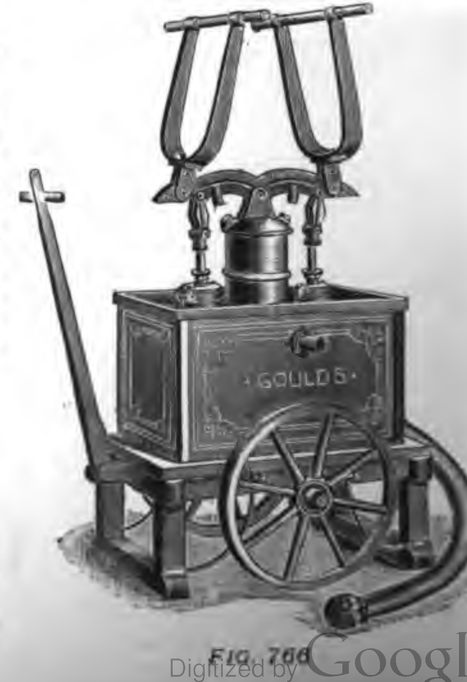
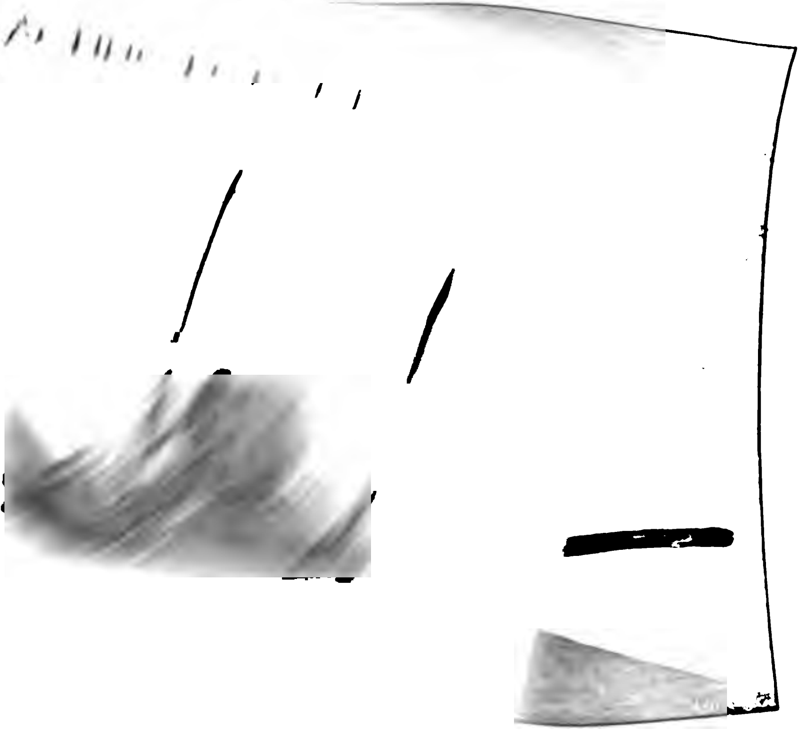


FIG. 766

…WAN-NECK VILLAGE FIRE ENGINE.

…D FOLDING LEVERS.

"…HALLENGE" DOUBLE…



…drawn by hand. It can be tu…
The Double Brass Cylinder I…
…esired to suit any particular loc…
…ondents, at lowest possible cost…
… to 307 for these.
…two leads of hose, furn…

Discharge.	Cipher.	Br…
1 2	Sulky Sun	

GOULDS TWO-CYLINDER FORCE PUMP.

WITH FOLDING BRAKES, ON PLATFORM WITH WHEELS.

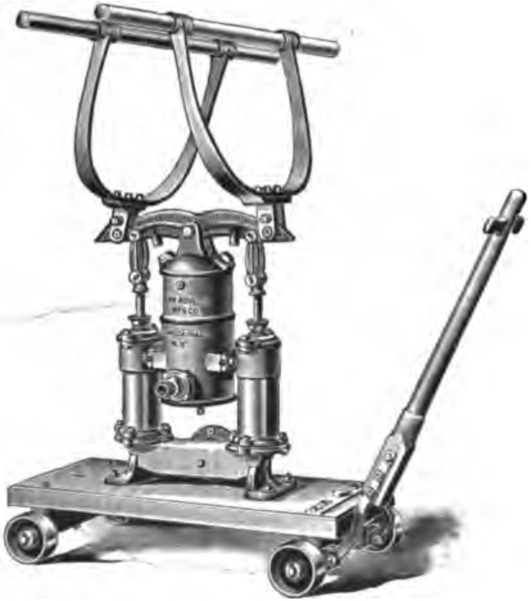


FIG. 285

Fig. 285 represents our portable Two-Cylinder Force Pump, arranged with folding brakes large enough to admit of six men working upon them. It is a very powerful Pump, and, in case of fire, will be found invaluable.

Pump is made with brass-cased piston rods, brass plungers, valves and stuffing boxes.

The valve at the bottom of the Cylinder is double and improved in its construction, and can be readily tripped or opened by pressing down the lever until it strikes the top of the air chamber.

The Pump is simple in its construction, not liable to get out of order, and by the directness of its action and consequent freedom from friction is a most efficient and powerful Pump.

We make them with Iron Cylinders or with Brass Cylinders, with all the *working portions* of the Pump of the same material.

For Hose, Hose Couplings, Nozzles, etc., see pages 304 to 307.

FIG. 285. SIZES, PRICES, ETC.

No.	Diameter Cylinder.	Stroke.	Capacity per Rev.	Suction.	Discharge.	IRON CYLINDERS.		BRASS-LINED CYLS.		BRASS CYLINDERS.	
						Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
2	2½ in.	6 in.	.26 gal.	2 in. hose.	1¼ in. hose.	Defy	$68.00	Raptwot	$75.00	Delaine	$88.00
4	3 "	6 "	.37 "	2 "	1¼ "	Visipl	70.00	Rapwua	77.00	Visit	90.00
6	3½ "	6 "	.50 "	2½ "	1¼ "	Delfy	77.00	Rapwyl	87.00	Delf	100.00
8	4 "	6 "	.65 "	2½ "	1½ "	Deign	85.00	Rapxon	95.00	Dell	115.00
10	4½ "	6 "	.83 "	3 "	2 "	Deist	95.00	Rapxul	110.00	Delve	130.00
12	5 "	6 "	1.02 "	4 "	3 "	Daygo	105.00	Rawaya	120.00	Daygul	145.00
16	6 "	8 "	1.96 "	4 "	3 "	Delty	135.00	Raweb	155.00	Demi	185.00

GOULDS SWAN-NECK VILLAGE FIRE ENGINE.

BRASS CYLINDERS AND FOLDING LEVERS.

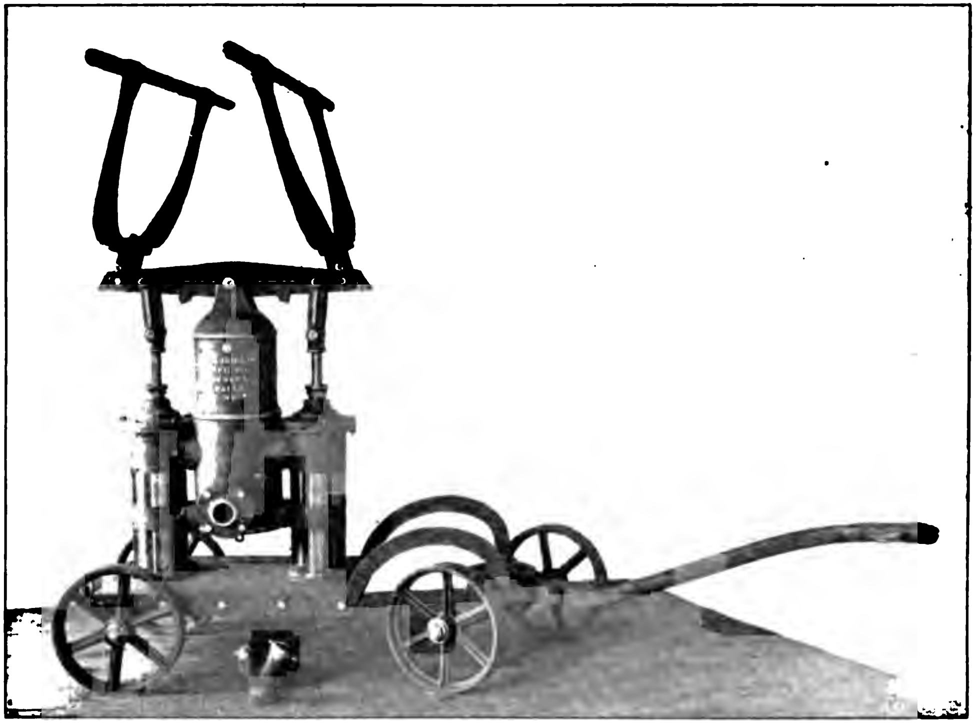


Fig. 1182 is one of our Swan-Neck Portable Fire Engines, arranged to be drawn by hand. It can be turned in its own length. Everything about the Engine is complete and first-class. The Double Brass Cylinder Force Pump used is very powerful. Should any change in the levers or truck be desired to suit any particular locality, we shall always be glad to arrange them to suit the wishes of our correspondents, at lowest possible cost. We build in two sizes. Price does not include hose or fittings. See pages 304 to 307 for these.

Brass "Siamese" double-hose connection, fitting discharge for two leads of hose, furnished when ordered. at $5.50 extra list.

FIG. 1182. SIZES, PRICES, ETC.

No.	Dia. Cyl.	Stroke.	Capacity per Minute.	Suction.	Discharge.	Cipher.	Brass Cylinders.
10	4½ in.	6 in.	34 gals.	2½ in.	1½ in.	Sulky	$170.00
16	6 "	8 "	78 "	3 "	2 "	Sun	225.00

GOULDS SWAN-NECK FIRE ENGINE.

WITH HEAVY GALVANIZED TANK. FOLDING LEVERS.

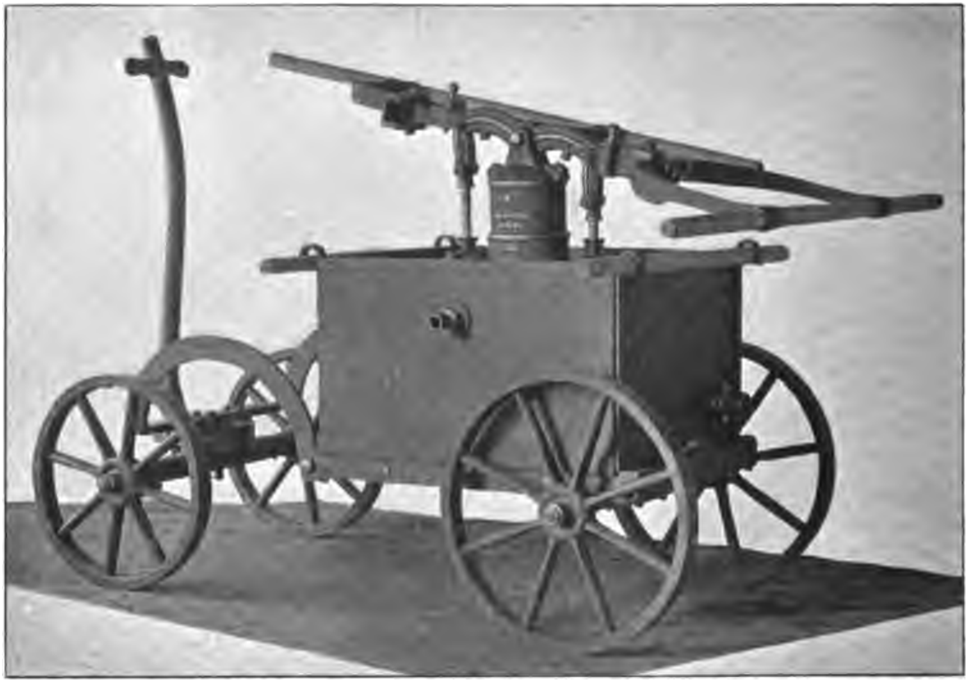


FIG. 1183

Fig. 1183 has powerful Double-Cylinder Brass Force Pump, mounted in heavy galvanized tank or reservoir, holding about 70 gallons. Tank can be detached from truck and readily carried, by use of handles, as shown in cut, to any desired locality.

Engine is so built that, by the interchange of a single cap, suction can be taken either from the tank or through suction hose, attached to the outside of the tank at the end. The Pump proper is similar to one used in Fig. 1182 outfit, on previous page, except that levers are specially made so as to fold lengthwise of the Engine. Price does not include hose or couplings, which can be furnished as required, of any particular quality or lengths, at the lowest market rates. See pages 304 to 307.

FIG. 1183. SIZE, PRICE, ETC.

No.	Dia. Cyls.	Stroke.	Capacity per Min.	Suction.	Discharge.	Cipher.	**Brass Cylinders.**
10	4½ in.	6 in.	34 gals.	2½ in.	1½ in.	Tickwo	$250.00

GOULDS SWAN-NECK VILLAGE FIRE ENGINE.

WITH GUN-METAL CYLINDERS.

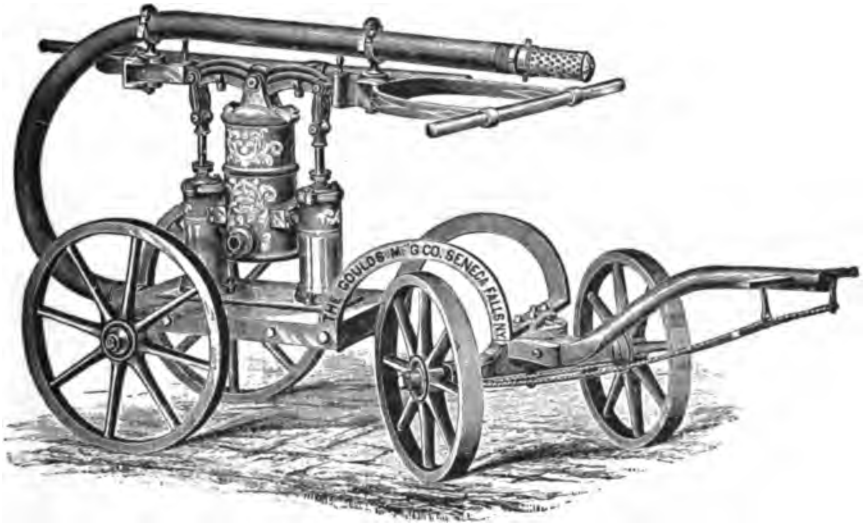

THE GOULDS M'F'G CO. SENECA FALLS, N.Y.

FIG. 465. SIZE 4½" X 6"

Fig. 465 represents our Swan-Neck Village Fire Engine with two gun-metal cylinders and arranged to be drawn by hand. This Engine is self-contained, and the swan neck allows it to be turned in its own length. The Pump is securely fastened to an iron bed-plate, doing away with the expense of a reservoir or box. Engine has strong wooden wheels with wrought-iron tires, hard-wood pole, fifth wheel, etc.

Pump has brakes or levers, which are reversible and folding. The valves are of an approved pattern, and everything is as complete as first-class workmanship and the best of materials can make it.

From eight to twelve men can work on the brakes and with this force an effective fire stream can be thrown from 100 to 125 feet horizontally, or 60 to 90 feet vertically.

FIG 465. SIZES, PRICES, ETC.

No.	Diameter Cylinders.	Stroke.	Capacity per Revolution.	Suction.	Discharge.	Gun-Metal Cylinders.	
						Cipher.	Price.
10	4½ in.	6 in.	.83 gal.	2½ in. hose	1½ in. hose	Glassell	$200.00
16	6 "	8 "	1.96 "	3 "	2 "	Gleam	280.00

Prices do not include any hose. For list on Hose, Couplings, etc., see pages 304 to 307. Any length of drag rope can be furnished at extra price.

GOULDS VILLAGE FIRE ENGINE.

WITH FOLDING BRAKES FOR TEN MEN TO OPERATE.

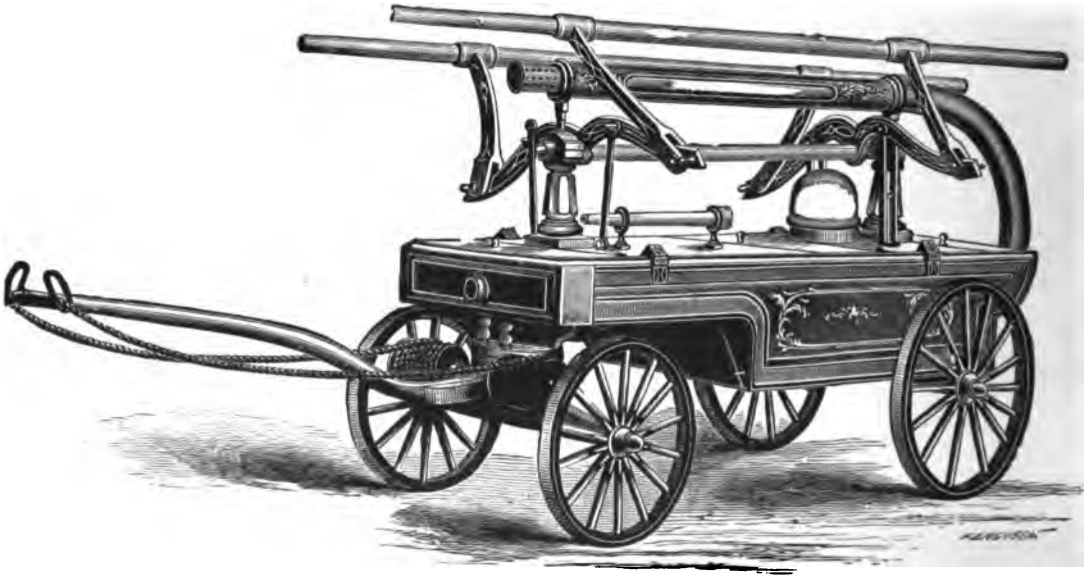


FIG. 539

Fig. 539 represents our Village Fire Engine with folding brakes for ten men. This engine is very strong and durable and specially adapted for use in small towns where the streets are poorly paved and Engine meets with the roughest kind of service. Engine has brass cylinders, brass pistons, iron-tired wheels with metal hubs, heavy iron axles and folding levers or brakes, with automatic locks. It will throw one ⅝-inch stream about 110 feet. It is equipped with one nickel-plated play pipe with three nozzles, one pair suction hose couplings and suction strainer, rope reel, drag rope and all necessary wrenches.

Price does not include suction hose, which we can supply, as ordered, at market rates. See pages 304 to 307.

FIG. 539. SIZE, PRICE, ETC.

Fig. 539, 4½-inch x 7 inch Cylinders, fitted for 2½-inch suction hose and 1½ or 2-inch discharge hose. Complete as above..............(Laden) $375.00

GOULDS FACTORY HOSE CART.

Fig. 530 represents our most popular style of cheap Hose Cart. It is constructed of the best materials and is designed especially for village fire departments, lumber yards, factories, etc.

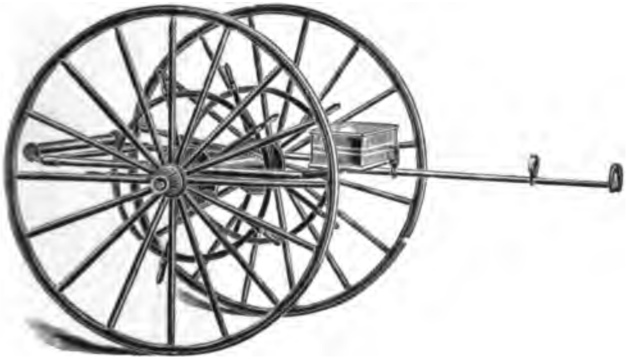


FIG. 530

FIG. 530. SIZES, PRICES, ETC

No. 1, 4 ft. wheels, carrying capacity about 250 ft. 2½ in. rubber hose.
or 350 " 2 " " "
or 500 " 2½ " linen "
or 300 " 2½ " cotton rubber-lined.
(Blushe) $40.00

No. 2, 5 ft. wheels, carrying capacity about 700 ft. 2 in. cotton hose.
or 500 " 2½ " " "
or 450 " 2½ " rubber "
(Blushf) $70.00

GOULDS BALANCED HOSE CART.

Fig. 542, Hose Cart, is so balanced that there is no weight on the tongue, making it easily handled with a heavy weight of wet hose. It is furnished with handles on end of reel spokes for reeling. With each cart goes drag rope, reel, axe, crow-bar and tool box.

FIG. 542. SIZE, PRICE, ETC.

No. 3, 5 ft. wheels, carrying capacity about 800 ft. 1½ in. } Cotton rubber-
or 700 " 2 " } lined
or 500 " 2½ " } mill hose.
or 600 " 1½ " rubber hose.
or 450 " 2 " " "
or 400 " 2½ " " "
(Waragi) $100.00

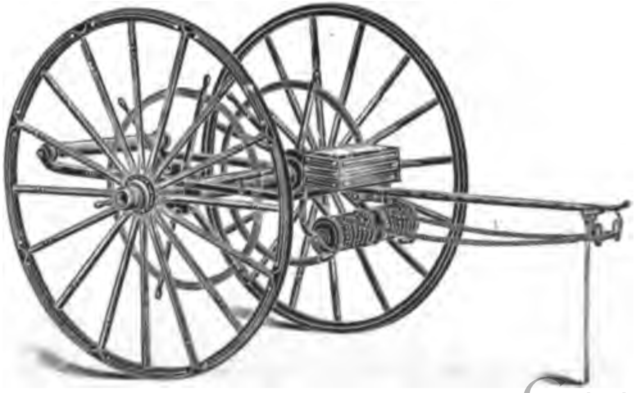
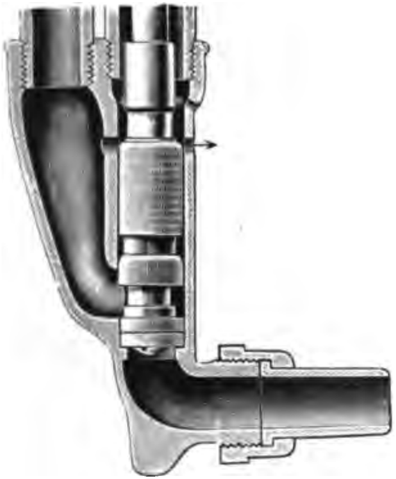


FIG. 542

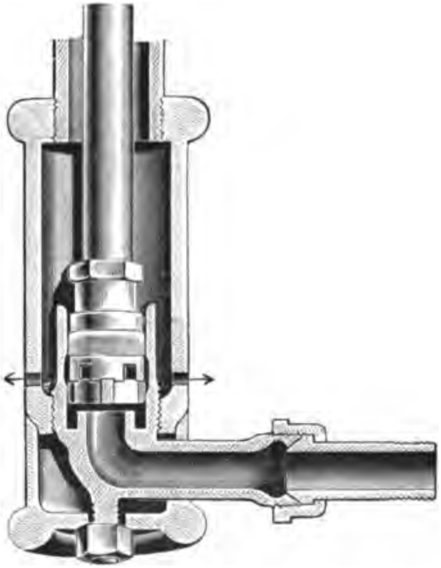
For Hydrants,
etc., see Pages
279 to 284.

GOULDS HYDRANT VALVE CONSTRUCTION.



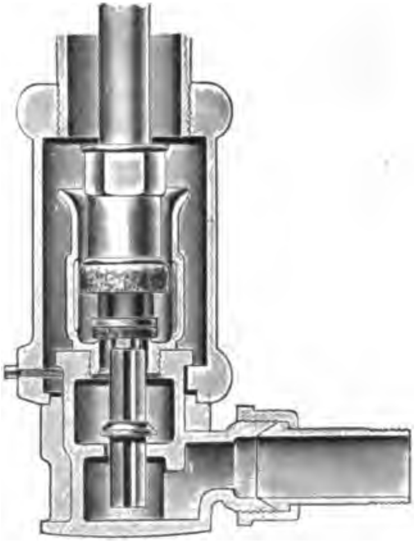
SECTIONAL VIEW OF "CRESCENT" VALVE.

See Figs. 860, 861, 811, 812, 1040, 813, 1240.



SECTIONAL VIEW OF "STAR" VALVE.

See Figs. 646 and 647.



SECTIONAL VIEW OF "SUN" AND "NO-SHOCK" VALVE.

See Figs. 1174, 1175 and 1116.

All our Hydrants and Street Washers are made with two pipes—wet and dry. All are anti-freezing and all are tested under pressure. "Crescent" Hydrants and Street Washers have "wet" and "dry" pipes side by side. "Wet" pipe conveys water to spout, while "dry" pipe simply contains the rod which operates plunger.

The illustration is so plain and construction so simple as to hardly need explanation. The rod in this hydrant is actuated by brass screw and handle above and raising plunger the smallest fraction of an inch closes waste before any water can enter discharge pipe. With the valve open, we have a full and unobstructed flow of water through Hydrant, which can well be compared to a straight-way valve or round-way cock. Closing the valve empties all water from wet pipe through drip-hole. Plunger and valve case and couplings are Brass.

To repair "Crescent" Hydrant or Washer, remove top cap or plate and withdraw plunger valve.

"Star" Hydrants and Street Washers have an outer or "dry pipe," inside of which is the "wet pipe," through which water passes to spout, which is screwed into elbow at its top and moves with it. Plunger is attached to lower end of "wet pipe." When wheel handle at top is turned, "wet pipe" is raised, lifting plunger from seat, instantly closing drip-hole, and allowing water an unobstructed passage through inner pipe and spout. Plunger can be withdrawn without taking up Hydrant. Valve case and plunger are brass.

"Sun" and "No-Shock" Hydrants are in valve construction and arrangement of "wet" and "dry" pipes similar to the "Star," with the addition of stop valve, which automatically shuts off the water if plunger is withdrawn for repacking.

"CRESCENT" HYDRANTS AND STREET WASHERS.

WITH STRAIGHT-WAY VALVE.

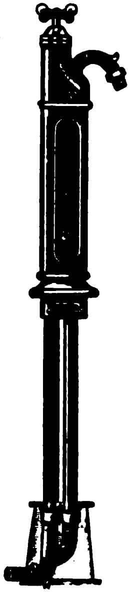


FIG. 860, ¾"

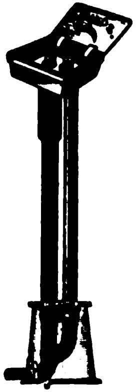


FIG. 861, ¾"

The cuts show our new "Crescent" Hydrants and Street Washers with all necessary parts brass, and two pipes—one dry, through which the valve can be withdrawn for repacking, the other forming a passage for the water to the spout

They are perfectly anti-freezing. The valve closes against the pressure; the waste is ample and reliable, and no water whatever can enter the dry pipe.

In both Hydrant and Street Washer a solid brass screw at the top actuates the plunger valve below. For details of valve construction see sectional view on page 279.

Fig. 860, Hydrant, has stock made in two halves bolted together. Inlet has thread for ¾-inch iron pipe and soldering tube for lead pipe. Spout is provided with brass bushing, cut to receive ¾-inch hose coupling.

Fig. 861, Street Washer, has same valve, pipes, etc., as are used with Hydrant. Inlet has thread for ¾-inch iron pipe and soldering tube for lead pipe. Discharge fitted to receive ¾-inch half hose coupling. Key is furnished with each Street Washer.

Figs. 811 and 812, Hydrant and Washer, are similar in design and construction to Figs. 860 and 861, just described, but carry larger connecting pipes, heavier valve cases and valves, stocks or sides, and are regularly fitted with bottom inlet for 1-inch iron pipe.

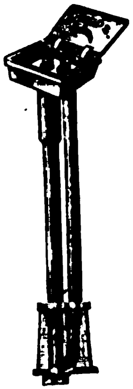


FIG. 812, 1"

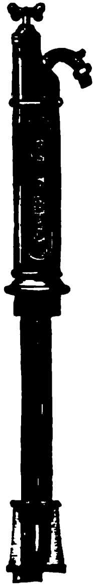


FIG. 811, 1"

SIZES, PRICES, ETC.

Length to Set in Ground.	Fig. 860. ¾ in.		Fig. 861. ¾ in.		Fig. 811. 1 in.		Fig. 812. 1 in.	
	Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout Fitted for ¾-in. Hose.		Inlet Fitted for ¾-in. Iron and Lead Pipe. Discharge Fitted for ¾-in. Hose.		Inlet Fitted for 1-in. Iron Pipe. Spout Fitted for 1-in. Hose.		Inlet Fitted for 1-in. Iron Pipe. Discharge Fitted for 1-in. Hose.	
	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
18 in.	Wagein	$9.80	Wallme	$6.60	Wagtail	$11.65	Waltin	$7.70
24 "	Wageis	10.10	Walnc	6.85	Wahaby	11.95	Waltres	8.00
30 "	Clonged	10.35	Coldiv	7.10	Craftier	12.25	Curbed	8.30
36 "	Wagerd	10.60	Wainag	7.35	Walfer	12.55	Walv	8.60
42 "	Clubbing	10.80	Colder	7.55	Crustic	12.85	Curiosity	8.90
48 "	Wagest	11.00	Walrn	7.75	Walft	13.15	Walved	9.20
54 "	Wagging	11.25	Craft	8.00	Crustier	13.45	Walving	9.50
60 "	Waggis	11.50	Waist	8.25	Walled	13.75	Walvjs	9.80
72 "	Waggle	12.10	Waister	8.85	Walifa	14.35	Wakeb	10.40

Extra Street Washer Keys, $0.20.

GOULDS CRESCENT HYDRANTS AND STREET WASHERS.

WITH STRAIGHT-WAY VALVE.

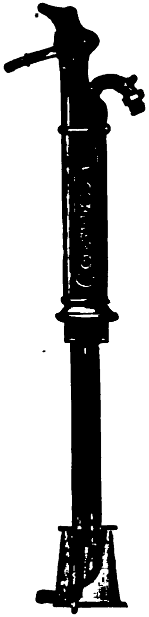


FIG. 1040, ¾"

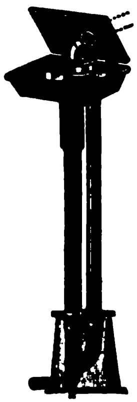


FIG. 1240, ¾"

Fig. 1040 represents our "Crescent" Hydrant, arranged with lever instead of screw handle. In all other respects it is the same as Fig. 860, shown on page 280, being perfectly anti-freezing. The flanged top permits the withdrawal of plunger through dry pipe whenever it needs repacking. Inlet has thread for ¾-inch iron pipe and soldering tube for lead pipe. Spout has brass bushing to receive ¾-inch hose coupling.

Fig. 1240, Street Washer, is our Fig. 861, described on previous page, with the addition of a swivel coupling, which will permit hose to be moved in any position and avoids all possibility of kinking, which is the cause of leaks. Key goes with each Street Washer. Extra keys 20c.

Fig. 813, Hydrant, is same as Fig. 811, page 280, stripped of stock or sides, making it somewhat lighter and cheaper. Inlet is fitted for 1-inch iron pipe. Spout 1-inch hose.

Fig. 1123, Hydrant, is same as Fig. 860, page 280, stripped of stock or sides. Inlet is fitted for ¾-inch iron or lead pipe. Spout for ¾-inch hose.

Sectional view of valve, used in above, is shown on page 279.

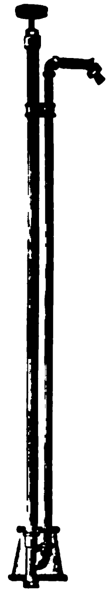


FIG. 813, 1"

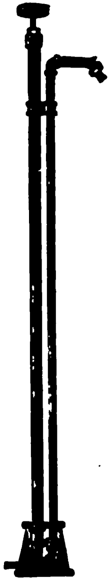


FIG. 1123, ¾"

SIZES, PRICES, ETC.

Length to Set in Ground.	Length Over All of Hydrants (Figs. 1040, 813 and 1123.)	Fig. 1040, ¾ Inch.		Fig. 813, 1 Inch.		Fig. 1123, ¾ Inch.		Fig. 1240, ¾ Inch.	
		Inlet Fitted for ¾-Inch Iron and Lead Pipe. Spout Fitted for ¾-Inch Hose.		Inlet Fitted 1-Inch Iron Pipe. Spout Fitted 1-Inch Hose.		Inlet Fitted for ¾-Inch Iron and Lead Pipe. Spout Fitted for ¾-Inch Hose.		Inlet Fitted ¾-Inch Iron and Lead Pipe, Discharge Fitted for ¾-Inch Hose.	
		Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
18 in.	42 in.	Drebeha	$10.75	Curiole	$8.65	Loines	$7.65	Pokjob	$7.85
24 "	48 "	Drebelj	11.10	Currul	8.95	Loinfu	7.95	Pokjul	8.10
30 "	54 "	Drebeju	11.40	Curveted	9.25	Loingx	8.25	Pollsac	8.35
36 "	60 "	Drebfal	11.65	Dagger	9.55	Loipa	8.55	Pollset	8.60
42 "	66 "	Drebfed	11.85	Damocles	9.85	Loipate	8.85	Polma	8.80
48 "	72 "	Drebfig	12.10	Danced	10.15	Loipid	9.15	Polmebe	9.00
54 "	78 "	Drebfos	12.35	Dashing	10.45	Loipow	9.45	Polmeck	9.25
60 "	84 "	Drebfub	12.65	Daystar	10.75	Loipum	9.75	Polmedu	9.50
72 "	96 "	Drebgoo	13.30	Decayed	11.35	Lumpis	10.35	Polmefo	10.10

GOULDS "STAR" HYDRANT AND STREET WASHER.

WITH COMPRESSION VALVES AND MOVEABLE WATERWAYS.

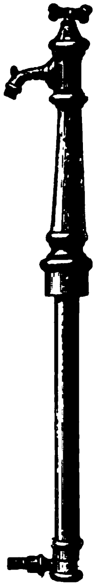


FIG. 646, ¾ AND 1"

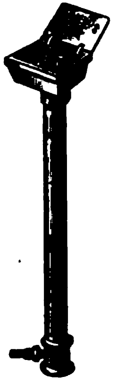


FIG. 647, ¾ AND 1"

These goods have been on the market now for several years, and are so familiar to those who have used them, that any description of their superior merits is unnecessary. There is not much opportunity to display constructive taste in a Street Washer, but it is universally conceded that our Hydrant is handsome in design and finish, and is quite an addition to the appearance of a yard or lawn. We have allowed no opportunity to pass to improve both our Hydrants and Washers; and while in general the principle of their mechanism is unchanged, many minor changes and improvements have been made. Sectional view, page 279, shows valve construction and arrangement of wet and dry pipes.

They are perfectly anti-freezing. They are almost instantly opened or closed by means of the double-threaded brass screw, actuating the valve below. They can be repaired from the top without digging up.

They have a brass swivel or coupling nut (not an iron one), and the brass tube for service pipe connection is ground to a joint with the valve case elbow. They readily sell for more money than any other, because no other bear any comparison with them. It would always be well to have a short piece of lead pipe between the coupling and service pipe, as its flexibility will prevent a fracture of the pipe when the frost heaves the ground, and in clay soil to make some provision for drainage of waste water, if it be nothing more than a small body of gravel or sand between the bottom attachment and clay. We measure from ground line to centre of service pipe inlet. Every Hydrant and Washer is thoroughly tested before leaving our factory.

Our ¾-inch "Star" Hydrants and Washers have inlet fitted for both iron and lead pipe—¾-inch. Spout fitted for ¾-inch hose coupling. Our 1-inch hydrant and washers have 1-inch inlet and outlet. An iron *turnkey* goes with each street washer. Extra keys, 20 cents.

FIG. 646 AND 647. SIZES, PRICES, ETC.

Length to set in the Ground.	**Fig. 646. ¾ in.**		**Fig. 647. ¾ in.**		**Fig. 646. 1 Inch.**		**Fig. 647. 1-Inch.**	
	Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout for ¾-in. Hose.		Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout for ¾-in. Hose.		Inlet Fitted for 1-In. Iron and Lead Pipe. Spout for 1-In. Hose.		Inlet Fitted for 1-Inch Iron and Lead Pipe. Spout for 1-Inch Hose.	
	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.	Cipher.	Price.
18 in.	Venelld	$9.00	Vengerl	$7.50	Ventana	$11.50	Veracit	$9 00
24 "	Venejan	9.00	Venlai	7.50	Venter	11.50	Veranda	9.00
30 "	Veneom	10.00	Venlson	8.50	Ventilat	12.50	Verb	10.00
36 "	Venene	10.00	Venoma	8.50	Ventiles	12.50	Verbal	10.00
42 "	Venerat	11.00	Venous	9.50	Venture	13.50	Verbaml	11.00
48 "	Venerel	11.00	Ventabc	9.50	Venue	13.50	Verbatu	11.00
54 "	Veney	12.00	Ventage	10.50	Venulos	14.50	Verblag	12.00
60 "	Venge	12.00	Ventall	10.50	Venus	14.50	Verbose	12.00
72 "	Vocal	13.00	Vocaljx	11.50	Vocalic	15.50	Vocalks	13.00

"SUN" AND "NO SHOCK" HYDRANTS AND WASHER.

WITH WROUGHT STOCK AND ADJUSTABLE BASE.

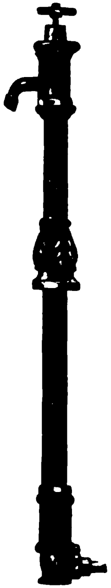


FIG. 1174, ¾"

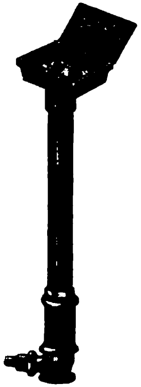


FIG. 1175, ¾"

Fig. 1174, "Sun" Hydrant, possesses, we believe, all the best features contributing to a reliable anti-freezing two-pipe hydrant. It is also of handsome appearance. The stock and outer casing is formed of large wrought pipe, inside of which is the smaller or "wet pipe," conveying the water to spout. Base is adjustable. Plunger is actuated by wheel handle and brass screw. Plunger can be withdrawn *through the hydrant and automatic stop valve prevents water flowing when plunger is withdrawn.* Sectional view of plunger, valve, and waterways is shown on page 279.

Fig. 1175, "Sun" Street Washer, has same arrangements of pipes and valves, including the very desirable *automatic stop valve.* Box and cover are malleable. Key goes with each Street Washer. Extra keys, 20 cents list.

Fig. 1116, "No Shock" Self-Closing Hydrant, is in all respects identical with Fig. 1174, except that strong brass spring in the top of hydrant seats the plunger (*against the pressure*), unless it is held open by the lever or latch. Individuals and water companies appreciate the self-closing feature as waste of water is prevented.

See sectional view page 279.

Hydrants and Street Washer, described above, have inlet supplied with brass swivel nut and brass tube cut to receive ¾-inch iron pipe coupling and also suitable for wiping into lead pipe. The use of a short piece of lead pipe gives flexibility when frost heaves.

Spout or discharge is fitted for ¾-inch hose coupling.

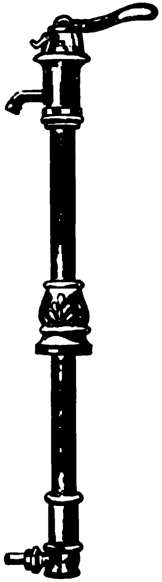


FIG. 1116, ¾"

FIGS. 1174, 1175 AND 1116. SIZES, PRICES, ETC.

Length to Set in Ground.	Length Over All of Hydrants.	Fig. 1174. ¾-in. Hydrant. Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout Fitted ¾-in. Hose.		Fig. 1175. ¾-in. Washer. Inlet Fitted for ¾-in. Iron and Lead Pipe. Discharge Fitted ¾-in. Hose.		Fig. 1116. ¾-in. Hydrant. Inlet Fitted for ¾-in. Iron and Lead Pipe. Spout Fitted ¾-in. Hose.	
		Cipher.	Price	Cipher.	Price.	Cipher.	Price.
18 in.	45 in.	Rudfeck	$9.00	Rudfofs	$7.50	Panijx	$9.00
24 "	50 "	Rudfint	9.00	Rudgab	7.50	Fustal	9.00
30 "	57 "	Rudfisl	10.00	Rudgeda	8.50	Fustis	10.00
36 "	63 "	Rudfits	10.00	Rudgeck	8.50	Fustite	10.00
42 "	69 "	Panigsl	11.00	Panihy	9.50	Fustiud	11.00
48 "	75 "	Rudfobs	11.00	Rudgeds	9.50	Fustiva	11.00
60 "	87 "	Rudfoda	12.00	Rudequt	10.50	Fustjic	12.00
72 "	99 "	Rudfoes	13.00	Rudfaa	11.50	Fustjoe	13.00

GOULDS "STAR" WALL HYDRANT AND WASHER.

Fig. 1156, Wall Hydrant and Washer, has solid brass compression valve, actuated by a double-threaded brass screw. Hydrant is operated from outside of building, but shuts off inside of building and out of reach of frost. The connection inside is effected by means of a brass swivel or coupling nut and elbow fitted for ¾-inch lead or iron pipe. The hub on the outside is cut for ¾-inch hose; can be cut for 1-inch, if so ordered. We furnish a key with each hydrant.

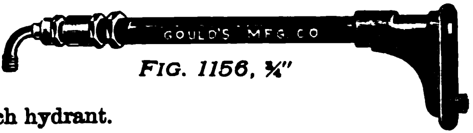


FIG. 1156, ¾"

FIG. 1156. SIZES, PRICES, ETC.

Inlet for Iron or Lead Pipe.	Outlet For Hose.	Length.	For Walls.	Cipher.	Price.
¾ in.	¾ in.	12 in.	9 in.	Tanto	$4.25
¾ "	¾ "	16 "	13 "	Tantub	4.50
¾ "	¾ "	21 "	18 "	Tantva	4.75
¾ "	¾ "	27 "	24 "	Tantwy	5.00

Extra keys, each, 20 cents.

ADJUSTABLE SERVICE OR CURB BOXES.

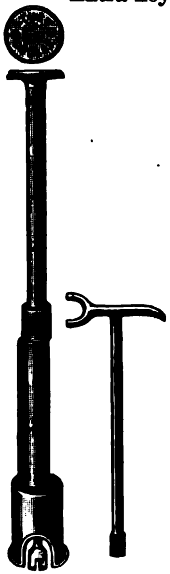


FIG. 1159

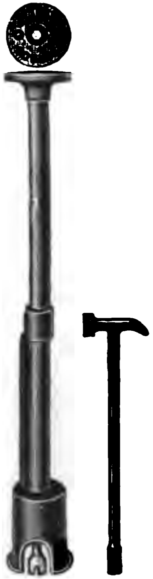


FIG. 1184

Fig. 1159 is variously known as "Curb-Box," "Service-Box" and "Stop-Cock-Box." The last name describes its use, which is to open and close Stop-Cocks in service pipes—both water and gas. Bottom part is cast-iron, shaped to fit over Stop-Cock. Through this extends a 1-inch wrought pipe, which can be raised or lowered to adjust the top cap to the level of the ground. This upper section is held adjusted by small spring. To admit key, top cap is removed. This is easily done by applying the spanner on the end of our key (as shown in cut). Threads in cap are cut in brass bushing; therefore cap cannot rust fast. Key fits over forked rod which is inside of box, and, turning the rod, opens and closes Stop-Cock. Forked rod is included with every box at prices below. Keys are only furnished when ordered, and then at 50 cents extra list. Fig. 1184 is the same as Fig. 1159, described above, except that a counter-sunk brass plug is inserted in top cap. To admit key, this plug can be removed instead of cap. Prices below include forked rod. Keys only furnished when ordered, and then at 50 cents list.

FIGS. 1159 AND 1184. SIZES, PRICES, ETC.

No.	Extension.	Top Section.	FIG. 1159.		FIG. 1184.	
			Cipher.	Price.	Cipher.	Price.
1	48 in. to 62 in.	1 in. pipe	Tiltist	$3.00	Ondkip	$3.00
2	58 " 72 "	1 "	Tiltito	3.40	Ondkos	3.40
3	70 " 84 "	1 "	Tiltiul	3.75	Ondkub	3.75

CURB BLOCK.

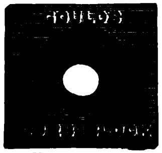


FIG. 827

Fig. 827 shows a very neat and serviceable Curb Block to be used in connection with Figs. 1159 and 1184 Curb Boxes. The block measures 7 x 7 inches, with opening to receive cap of Curb Box.

PRICE.

Fig. 827, each..(Whelk) $0.60

GOULDS NEW STEEL AMALGAM BELL.

COMPLETE WITH HANGINGS, AS SHOWN IN CUT.

Fig. 758 represents our well-known and popular Steel Amalgam Bell. We believe they are superior to many more expensive makes and that they will fully sustain the high standard of the "Goulds" Bell, and give the best satisfaction.

They are well adapted to farms, school houses, factories or any place where a cheap but serviceable Bell can be used.

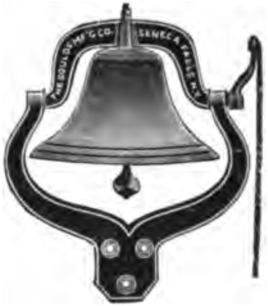


FIG. 758

FIG. 758. SIZES, PRICES, ETC.

No.	Diameter.	Approx. Weight.	Cipher.	Price.
A 1	15 in.	40 lbs.	Vaporing	$4.00
A 2	17 "	50 "	Vaporiz	5.00
A 3	19 "	75 "	Vapory	7.50
A 4	21 "	100 "	Varanus	10.00

GOULDS LARGE STEEL AMALGAM BELL.

WITH HANGINGS AND FRAME.

Fig. 353 represents our Steel Amalgam Bell, as we mount them in the larger sizes for churches, school houses, factories, engine houses, etc. We have sent thousands of these Bells to various portions of the United States, as their cheapness places them in the reach of any church, and they have always given splendid satisfaction.

We send all our Bells to market richly gilded.

We put tolling attachment, as shown in cut, on Nos. 6 and 7 at $4.00 extra, and on No. 8 at $5.00 extra list.

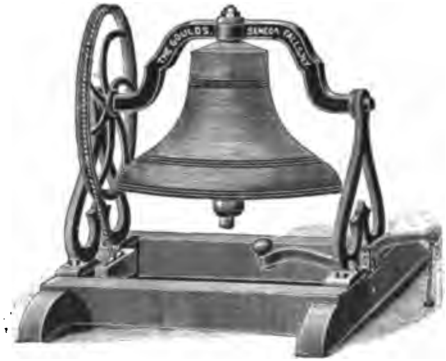


FIG. 353

FIG. 353. SIZES PRICES, ETC.

No.	Diameter.	Approximate Weight of Bell Only.	Approximate Weight Complete.	Size of Frame.	Cipher.	Price.
3	18½ in.	65 lbs.	172 lbs.	27 x 41½ in.	Fabric	$16.00
4	21 "	80 "	186 "	30 x 41½ "	Fabrile	20.00
5	24 "	134 "	240 "	32½ x 41½ "	Fable	25.00
6	28 "	247 "	396 "	36 x 48 "	Facel	40.00
7	30 "	325 "	487 "	36 x 48 "	Fact	50.00
8	33 "	414 "	689 "	38 x 48 "	Fade	75.00

GOULDS IMPROVED BURRALL'S IRON CORN SHELLER.

MADE EITHER RIGHT OR LEFT HAND. RIGHT HAND SENT UNLESS OTHERWISE ORDERED.

We are the only manufacturers of the genuine Burrall's Corn Sheller, which has for years been conceded the best in the market, and warn the Trade against spurious machines. *It is all iron, and very durable ; it shells and separates perfectly clean; it will shell either large or small corn ; and its repairs are cheap and easily placed.*

Get only the Burrall Sheller with our name on, and avoid all trouble.

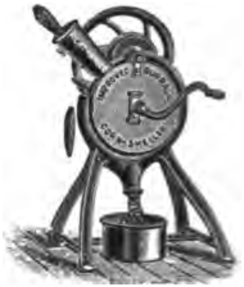
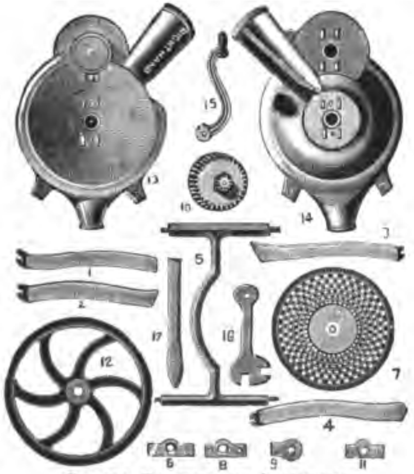


FIG. 430

FIG. 430. SIZE, PRICE, ETC.

	Approximate Weight.	Cipher.	Price.
Corn Sheller Complete	130 lbs.	Flew	$8.00

For export we pack one Sheller in a case, or from six to eight in a hogshead.



CORN SHELLER PIECES

FIG. 431

No. 1, Leg	$0.35
No. 2, Leg	.35
No. 3, Leg	.35
No. 4, Leg	.35
No. 5, Cross Bar	.60
No. 6, Shell Wheel Box, flat side	.15
No. 7, Shell Wheel	1.75
No. 8, Shell Wheel Box, round side	.15
No. 9, Feed Wheel Box, flat side	.15
No. 10, Feed Wheel	.80
No. 11, Feed Wheel Box, round side	.15
No. 12, Balance Wheel	1.75
No. 13, Flat Side	2.00
No. 14, Round Side	2.00
No. 15, Handle	.40
No. 16, Wrench	.15
No. 17, Spring	.65

GOULDS WROUGHT-IRON JACK SCREWS.

WITH IRON STANDS. SWIVEL CAPS.

Diameter of Screw.	Height Screwed Down.	Will Raise.	Cipher.	Price.
1½ inches	12 inches	6 inches	Fitch	$6.00
1¾ "	14 "	7 "	Fitz	7.00
2 "	16 "	9 "	Fiveba	10.00
2½ "	19 "	10 "	Fixif	14.00
3 "	23 "	12 "	Flagol	22.50

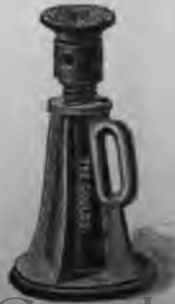


FIG. 383

GOULDS CAST-IRON JACK SCREWS.

WITH NUT TO LET INTO WOODEN BLOCK.

FIG. 385. SIZE, PRICE, ETC.

Diameter.	Length.	Cipher.	Price.
3 in.	24 in. cast threads	Finch	$6.00

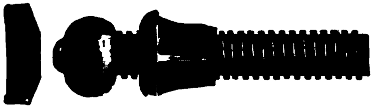


FIG. 385

GOULDS WROUGHT-IRON CHEESE AND CIDER PRESS SCREWS.

FIG. 386. SIZES, PRICES, ETC.

Diameter.	Length.	Cipher.	Price.
2¼ in.	36 in.	Peels	$13.25
2¾ “	36 “	Peepap	17.00
2¾ “	42 “	Peerso	18.75
3 “	36 “	Pelts	23.75
3 “	48 “	Pentup	27.50
4 “	48 “	Peonsi	37.50
4 “	60 “	Pert	40.00

Screws of any length or size made to order.

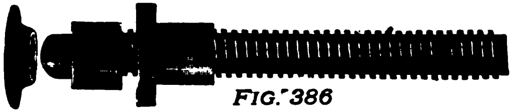


FIG. 386

GOULDS CAST-IRON CIDER PRESS SCREWS.

FIG. 1246. SIZE, PRICE, ETC.

Diameter.	Length.	Cipher.	Price.
4 in.	4 ft.	Fiend	$15.00

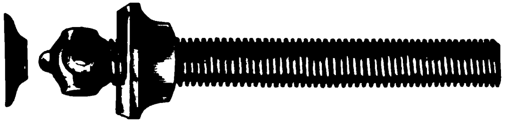


FIG. 1246

GOULDS WINE OR LARD PRESS SCREWS.

FIG. 379. SIZES, PRICES, ETC.

Diameter.	Length.	Cipher.	Price.
1¼ in.	18 in.	Firm	$5.75
1½ “	18 “	Firstmo	6.00
1¾ “	24 “	Fish	6.75
2⅛ “	24 “	Dagloam	12.50

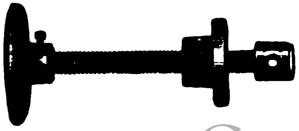


FIG. 379

WROUGHT STEEL SINKS.

COLUMBUS STEEL SINK,

With Removable Strainer and Brass Screw Coupling.

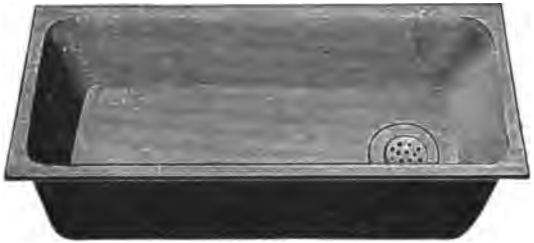


FIG. 1301

NEW ERA STEEL SINK.

With Ordinary Pipe Coupling.

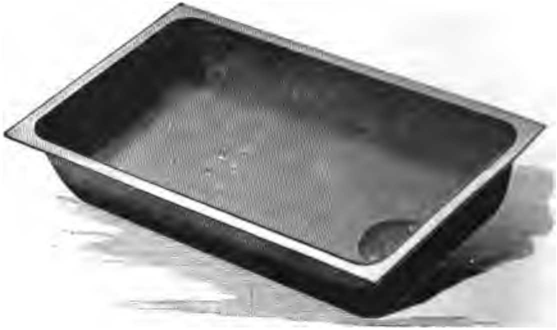


FIG 1302

COLUMBUS AND NEW ERA STEEL SINKS.

Size.	Depth.	Painted.	Galvanized.	Gray Enameled.	White Enameled.
16 x 24 in.	6 in.	$2.00	$4.00	$6.50	$7.50
18 x 30 "	6 "	2.80	5.10	8.50	10.00
18 x 36 "	6 "	3.25	6.50	9.50	11.00
20 x 30 "	6 "	3.00	6.25	9.00	10.50
20 x 36 "	6 "	3.70	7.75	10.50	12.00
20 x 40 "	6 "	4.00	8.50	11.50	13.00

Sinks with Patent Overflow, each 50 cents, net, extra.

NEW ERA ROLLED RIM STEEL SINK.

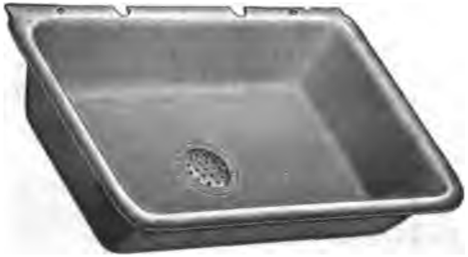


FIG. 1303

Size.	Depth.	Painted.	Galvanized.	White Enam.	Blue Enam.
16x24 in.	6 in.	$2.25	$2.70	$5.90	$3.55
18x30 "	6 "	2.70	3.55	7.60	4.30
18x36 "	6 "	3.25	4.30	9.45	4.80
20x30 "	6 "	3.25	4.30	9.45	4.80
20x36 "	6 "	4.00	5.10	11.55	5.35
20x40 "	6 "	4.30	5.90	12.65	6.95

SINK BACKS, 15 IN. HIGH.

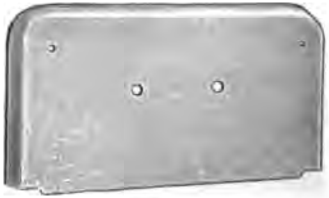


FIG. 1304

Width Inches.	24 in.	30 in.	36 in.	40 in.
Painted,	$1.60	$1.90	$2.20	$2.60
Galvanized	2.20	2.60	3.00	3.50
Blue Enameled	3.10	4.10	5.10	6.20
White Enameled	4.00	5.00	6.00	7.10

SINK BRACKETS.

Suitable for all sizes wrought steel sinks.

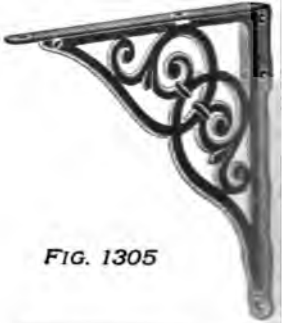


FIG. 1305

Plain, per pair	$1.00
Painted, per pair	1.15
Galvanized, per pair	1.45

Sinks furnished with Rubber Stoppers, 25 cents each net, extra. Sinks furnished with Patent Overflow, 50 cents net, extra.

GOULDS CAST-IRON SQUARE SINKS.

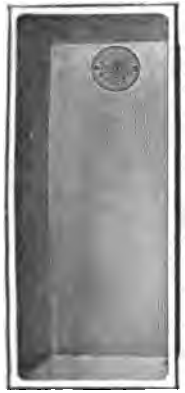
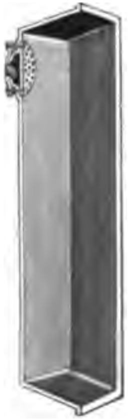


FIG. 428

Size.	Depth.	Painted.	Galvanized.	Enameled.
12 x 18 in.	6 in.	$1.25	$2.60	$4.75
14 x 20 "	6 "	1.50	3.20	8.00
14 x 24 "	6 "	1.70		
16 x 24 "	6 "	~~2.00~~ 1.80	4.00	6.50
15 x 27 "	6 "	2.00	4.25	7.25
16 x 28 "	6 "	2.10	4.50	7.50
16 x 30 "	6 "	2.25	4.75	7.75
17 x 28 "	6 "	2.20		
18 x 24 "	6 "	2.10	4.30	7.00
18 x 30 "	6 "	~~2.80~~ 2.50	5.10	8.50
20 x 30 "	6 "	3.00	6.25	9.00
18 x 32 "	6 "	3.00	6.25	9.50
18 x 36 "	6 "	~~3.25~~ 3.00	6.50	9.50
20 x 36 "	6 "	3.70	7.75	10.50
20 x 40 "	6 "	4.00	8.50	11.50
20 x 42 "	6 "	4.25	9.00	12.00
22 x 42 "	6 "	4.25	9.00	12.00
24 x 48 "	6 "	5.75	12.25	15.00
Patent Overflow Sinks with plug strainer, add to above list		$1.20	$1.25	$1.50
Patent Overflow Sinks with open strainer, add to above list		1.00	1.00	1.00



SECTIONAL VIEW.

GOULDS ADJUSTABLE SINK BRACKETS.

No.	For Sinks.	Painted.	Galvanized.
1	12 to 18 in. wide	$0.60 each	$1.00 each
2	18 to 24 "	1.00 "	1.50 "

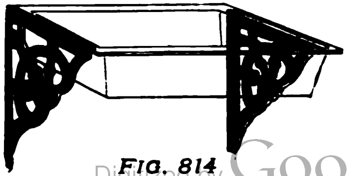


FIG. 814

GOULDS HALF CIRCLE SINKS.

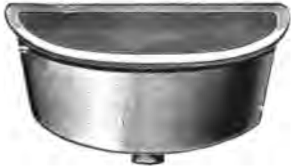
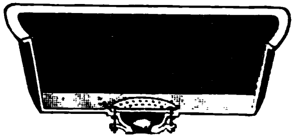


FIG. 418

No.	Back.	Width.	Depth.	Painted.	Galvanized.	Enameled.
1	24 in.	14 in.	6 in.	$1.50	$3.25	$6.00
2	27 "	14 "	6 "	1.80	3.90	7.00



SECTIONAL VIEW.

GOULDS CORNER SINKS.

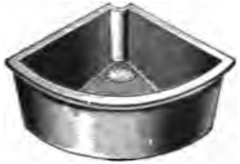
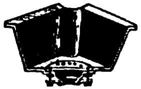


FIG. 429

No.	Sides.	Front.	Depth.	Painted.	Galvanized.	Enameled.
1	20 in.	28 in.	6 in.	$1.75	$3.50	$7.00
2	22 "	31 "	6½ "	2.10	4.20	8.00



SECTIONAL VIEW.

GOULDS SLOP SINKS.

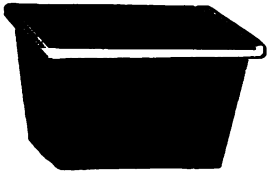
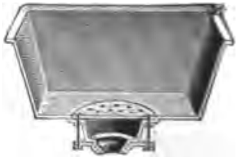


FIG. 419

No.	Size.	Depth.	Painted.	Galvanized.	Enameled.
1	16 x 16	10 in.	$2.70	$5.25	$7.50
2	20 x 14	12 "	3.50	6.50	8.50
3	20 x 16	12 "	4.00	8.25	10.00
4	24 x 18	12 "	4.50	9.00	11.00
5	24 x 20	12 "	5.00	9.50	11.50
6	23 x 15	15 "	4.25	8.50	11.00
7	30 x 20	12 "	8.00	15.00	16.00
8	36 x 20	12 "	10.00	19.00	20.00
9	48 x 20	17 "	20.00	36.00	38.00
If with Patent Overflow add, each			1.00	1.00	1.00
If with Patent Overflow and Plug Strainer add, each			1.25	1.25	1.50



SECTIONAL VIEW.

GOULDS SEWER TRAP.

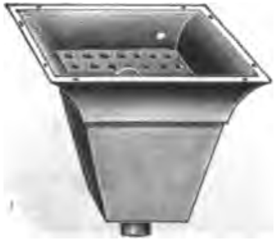
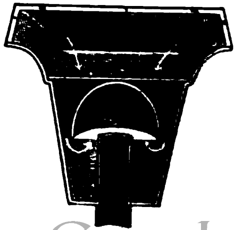


FIG. 403

No.	Size.	Depth.	Outlet.	Painted.	Enameled.
1	16 x 16 in.	8 in.	2 in.	$2.50	$5.50



SECTIONAL VIEW.

GOULDS LARGE CESS POOL.

WITH BELL TRAP.

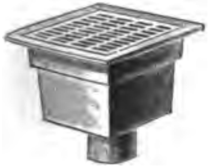
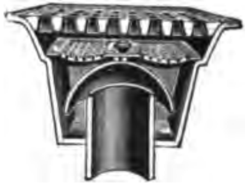


FIG. 369

Size.	Depth.	Outlet.	Painted.	Galvanized.	Enameled.
16 x 16 in.	10 in.	4 in.	$4.50	$10.00	$13.00

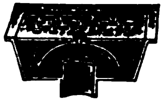


SECTIONAL VIEW

GOULDS CELLAR TRAP.

FIG. 417

No.	Size.	Depth.	Outlet.	Price.
1	9 x 9 in.	2¼ in.	2 in.	$1.25
2	12 x 12 "	2¼ "	2 "	1.60



SECTIONAL VIEW

GOULDS SEWER TRAP AND SLOP SINK.

WITH TRAP AND STRAINER.

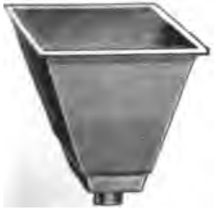
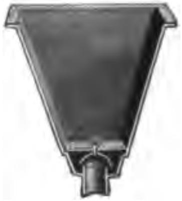


FIG. 416

No.	Size.	Depth.	Outlet.	Painted.
1	12 x 12 in.	6 in.	2 in.	$2.25
2	15 x 15 "	11½ "	2 "	3.35
3	18 x 18 "	12 "	3 "	4.25
4	20 x 20 "	12 "	3 "	5.25



SECTIONAL VIEW

GOULDS IMPROVED HYDRANT CESS POOL.

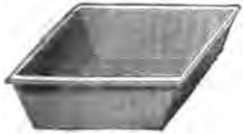
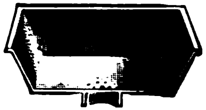


FIG. 420

No.	Size.	Depth.	Outlet.	Painted.	Galvanized.	Enameled.
1	12 x 12 in.	6 in.	5 in.	$1.00	$1.50	$2.25
2	14 x 14 "	6 "	5 "	1.15	1.75	2.75
3	16 x 16 "	6 "	5 "	1.30	1.95	3.50



SECTIONAL VIEW

GOULDS IMPROVED HYDRANT CESS POOL.

WITH BELL TRAP.

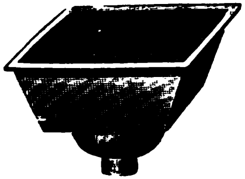
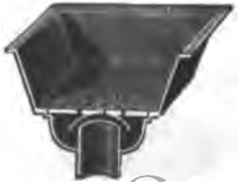


FIG. 421

No.	Size.	Depth.	Outlet.	Painted.	Galvanized.	Enameled.
1	12 x 12 in.	6 in.	5 in.	$1.50	$2.25	$3.50
2	14 x 14 "	6 "	5 "	1.65	2.50	3.75
3	16 x 16 "	6 "	5 "	1.80	2.75	4.25
4	18 x 18 "	6 "	5 "	2.10	3.25	5.00



SECTIONAL VIEW

GOULDS CAST-IRON SINK BACKS.

FIG. 1307.

Length, Inches.	20	22	24	28	30	32	36	38	42	48
Plain	$1.25	$1.35	$1.50	$1.80	$2.00	$2.25	$2.75	$3.00	$3.50	$4.25
Galvanized............	2.30	2.40	2.60	3.30	3.50	3.70	4.20	4.50	4.90	5.60
Enameled	2.30	2.40	2.60	3.30	3.50	3.70	4.20	4.50	4.90	5.60

Sink Backs will always be sent with two (2) Cock Holes, unless otherwise ordered.

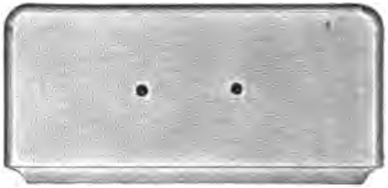


FIG. 1307

SINK STRAINER.

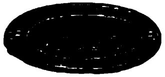


FIG. 435

Diameter.	Painted, per doz.	Galvanized, per doz.	Enameled, per doz.
4¾ in.	$1.50	$2.60	$3.00

SINK BOLT.

Fig. 368, per dozen..	$0.40
Fig. 368, per 100.	2.00
Short Brass Sink Bolts, per dozen..	1.00

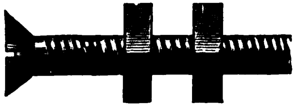


FIG. 368

OPEN END SINK COUPLING.

FOR LEAD PIPE.

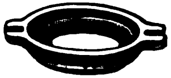


FIG. 434

	Painted.	Galvanized.
Fig. 434, per dozen................................	$1.50	$2.00

OPEN END SINK COUPLING.

FOR IRON PIPE.

	Painted.	Galvanized.
Fig. 366, each.	$0.75	$0.90

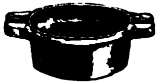


FIG 366

IRON SINK PLUGS.

WITH RUBBER STOPPER.

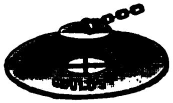


FIG. 1306

Plain.	Galvanized.	Enameled.
$0.20	$0.25	$0.30

PLAIN IRON PULLEYS.

BORED, TURNED AND BALANCED, WITH SET SCREWS.

FIG. 43. SIZES AND PRICES

Inches. Diameter of Pulley.	Width Face of Pulley.			
	1 to 3	4	5	6
6	$1.85	$1.98	$2.10	$2.30
7	2.00	2.24	2.48	2.70
8	2.21	2.37	2.63	2.87
9	2.40	2.63	2.90	3.18
10	2.55	2.78	3.08	3.36
12	2.93	3.15	3.45	3.75
14	3.23	3.53	3.75	4.13
16	3.60	3.83	4.05	4.43
18	4.20	4.35	4.65	5.03
20	4.80	4.95	5.25	5.63
22	5.40	5.55	5.85	6.30
24	6.00	6.30	6.75	7.50
26	6.38	6.75	7.35	8.25

Inches. Diameter of Pulley.	Width Face of Pulley.			
	4	5	6	8
28	$7.20	$7.95	$9.00	$10.80
30	7.65	8.62	9.75	12.00
32	8.25	9.38	10.73	13.65
34	9.00	10.20	11.55	14.40
36	9.90	11.25	12.60	15.60
38	11.10	12.45	14.10	17.25
40	12.00	13.50	15.45	18.38
42	13.35	14.55	16.35	19.35
44	14.85	15.60	17.40	20.85
46	16.65	17.32	18.60	22.13
48	18.15	....	19.80	23.40
50	19.73	....	21.53	24.98

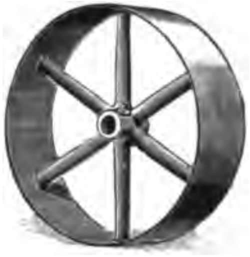


FIG. 43

We do not make 16-inch diameter pulley and larger, less than 3-inch width of face.

We make to order split, clamp, flange, or tight and loose. Always specify diameter, width, face and bore, also whether crowning or straight face and whether for single or double belt.

FLANGED-FACED COUPLING.

FIG. 42. SIZES AND PRICES.

Size, Inches...............	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼
Price..........	$5.85	$6.80	$7.95	$9.25	$10.80	$12.60	$14.70	$17.15	$20.80

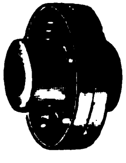


FIG. 42

PATENT COLD-ROLLED STEEL SHAFTING.

Size, Inches...............	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼
Price, per foot...........	$0.41	$0.60	$0.82	$1.07	$1.35	$1.67	$2.02	$2.40	$2.82

FRICTION CLUTCH COUPLING.

WITH LEVER STRAP AND END FULCRUM.

FIG. 1300. SIZES, PRICES, ETC.

Size of Clutch.	Will Transmit at 100 R. P. M.	Driven Shaft.		Outside Diameter.	Price.
		Largest Bore.	Space Required.		
5 in.	1¾' H. P.	1 11-16 in.	6¼ in.	7¾ in.	$20.00
6½ "	2½ "	1 15-16 "	6¾ "	9 "	23.00
8 "	5 "	2 7-16 "	6⅞ "	11 "	28.00
10 "	7 "	2 15-16 "	8¼ "	13 "	37.00
12 "	12 "	3 15-16 "	10¼ "	15½ "	47.50
14 "	18 "	4 7-16 "	12½ "	18 "	59.50
16 "	25 "	4 15-16 "	13 "	20¼ "	79.50
18 "	34 "	5 15-16 "	13¼ "	22¼ "	100.50
20 "	45 "	5 15-16 "	16¼ "	25½ "	121.50

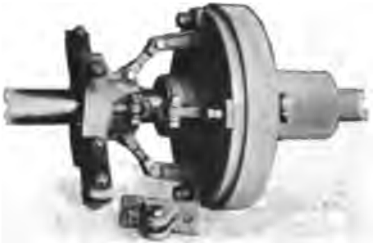
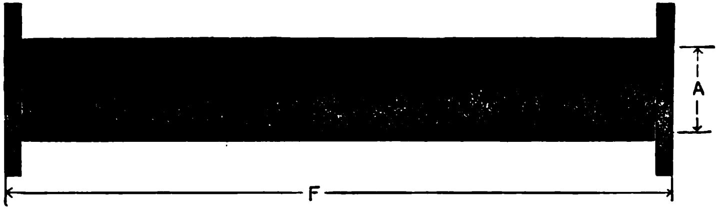


FIG. 1300

CAST-IRON FLANGE PIPE.

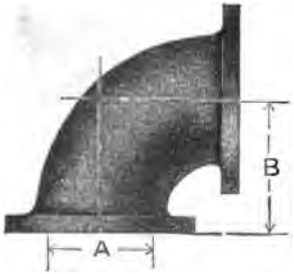
MEDIUM WEIGHT FOR 150 POUNDS PRESSURE.



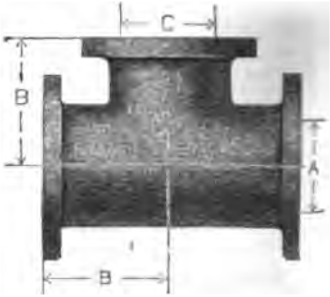
"A," Inside Diameter, Inches	3	4	5	6	7	8	9	10	12
"F," Length of Pipe, feet	8	9	10	12	12	12	12	12	12
Thickness of Metal, inches	7-16	15-32	½	½	9-16	⅝	21-32	11-16	¾
Weight per length, including Flange, lbs	136	207	300	420	540	684	800	925	1,200

STANDARD FLANGED FITTINGS.

FOR 200 POUNDS PRESSURE, WITH FLANGES FACED AND DRILLED.



ELBOW



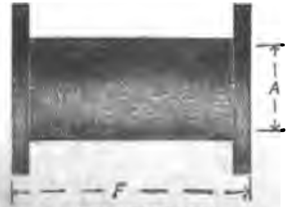
TEE

ELBOWS AND TEES. SIZES, PRICES, ETC.

"A" Size, In.	3	4	5	6	7	8	9	10	12
"B," Center to Face, In.	5½	6½	7	7½	8	9	9½	10	11½
Elbow	$7.00	9.25	11.75	14.00	19.75	23.75	30.00	36.00	50.00
Tee	$10.00	13.50	17.25	20.50	28.75	34.75	44.00	52.50	73.00

EXTENSIONS, SIZES, PRICES, ETC.

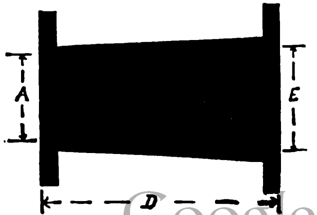
"A" Size, In.	3	4	5	6	7	8	9	10	12
Extension to order.									



EXTENSION.

INCREASERS, SIZES, PRICES, ETC.

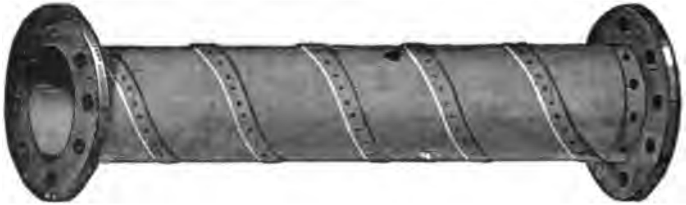
"A" Size, In	3	4	6	
"E" Size, In	4	6	8	**Other sizes to order.**
"D" Length, In	11	18	18	
Increaser	$6.00	$8.00	$12.00	



INCREASER

DOUBLE GALVANIZED SPIRAL RIVETED PRESSURE PIPE.

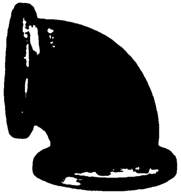
TESTED TO 150 POUNDS HYDROSTATIC PRESSURE.



Inside Diameter, Inches.	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24
Price per Lineal foot, including Flanges.	$0.50	.70	1.00	1.20	1.40	1.70	2.00	2.60	2.85	3.15	3.60	4.00	4.40	5.15	6.40	7.95	10.00	12.00
Thickness, Birmingham Gauge, No.........	20	20	20	18	18	18	18	16	16	16	16	14	14	14	14	14	12	12
Nominal Weight, per foot in Pounds........	2¼	3	4	5	6	7	8	11	12	14	15	20	22	24	29	34	40	50

Manufactured in lengths of 20 feet and not less than 6 feet, without extra charge.

GALVANIZED CAST AND WROUGHT-IRON FITTINGS.



Inside Dia. Inches.	Elbows.	Tees.	Crosses.	* Reducers.	Flanges.	Disks or Blind Flanges.	Bolts and Nuts.	Composition Gaskets.
3	$1.60	$2.75	$4.15	....	$0.39	$0.45	$0.04	$0.09
4	2.10	3.25	5.30	$3.00	.52	.65	.04	.10
5	2.85	4.40	6.70	3.50	.65	.78	.04	.12
6	4.10	5.70	8.00	4.75	.78	1.17	.04½	.16
7	5.10	7.30	11.00	5.50	1.04	1.56	.04½	.18
8	6.70	9.80	14.25	6.50	1.17	1.82	.04½	.23
9	9.00	13.80	18.80	8.00	1.56	2.34	.04½	.31
10	10.00	17.60	24.50	10.25	1.82	2.47	.04½	.40
11	13.00	20.00	26.50	12.00	1.95	3.25	.04½	.45
12	15.80	22.50	30.00	13.00	2.08	3.90	.04½	.50
13	19.15	25.00	33.50	14.60	2.34	4.55	.04½	.56
14	22.30	30.50	38.00	16.50	2.60	5.46	.05	.63
15	26.00	37.00	45.00	18.40	3.12	5.98	.05	.75
16	30.00	44.00	53.00	21.30	4.42	6.76	.05	.90
18	34.00	50.00	59.00	26.00	5.07	9.10	.05	1.08
20	38.50	56.00	67.00	29.40	5.59	11.70	.05	1.25
22	42.00	60.00	77.00	33.00	9.10	14.30	.05½	1.75
24	45.00	70.00	87.00	37.00	9.75	16.90	.05½	2.00

*Large end governs price list.

WATER RELIEF VALVES.

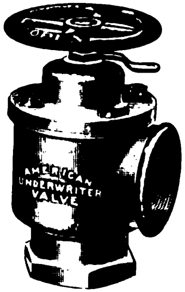


FIG. 34, IRON

Size.	Diameter of Base Flange.	Diameter of Side Outlet.	Brass.	Iron.
¾ in.	Screwed,	¾ in.	$10.00	....
1 "	"	1 "	12.00	....
1¼ "	"	1¼ "	15.00	....
1½ "	"	1½ "	20.00	....
2 "	"	2 "	40.00	$30.00
2½ "	"	2½ "	62.00	50.00
3 "	Screwed or 9 in. Flange,	3 "	80.00	65.00
3½ "	" 10 "	3½ "	....	80.00
4 "	" 11 "	4 "	....	100.00
5 "	" 12 "	9 "	....	150.00
6 "	" 14 "	10 "	....	180.00

In ordering state pressure to be carried.
Valves fitted with 60 pounds spring, can be set to relieve at any presssure 40 to 75 pounds.
Valves fitted with 100 pounds spring, can be set to relieve at any pressure 75 to 125 pounds.

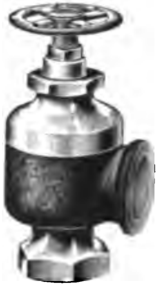


FIG. 34, BRASS

REVOLUTION COUNTERS.

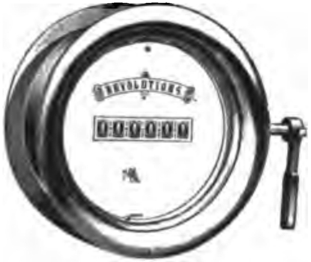


FIG. 1295

FIG. 1295. ROUND CASE REVOLUTION COUNTERS. PRICES, ETC.

Size.	Brass Case.	Nickel Plated, O. G., or Oct. Ring.
8½ in. dial, 8 wheels	$80.00	$82.50
8½ " 6 "	70.00	72.50
6¾ " 6 "	60.00	62.00
6 " 6 "	50.00	52.00

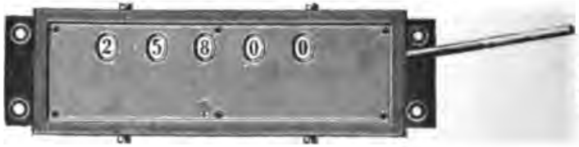


FIG. 1296

FIG. 1296. SQUARE CASE REVOLUTION COUNTERS. PRICES, ETC.

	SMALL.		LARGE.	
	Size.	Price.	Size.	Price.
4 Figures counting 10,000, in case	4½ x 1¾ in.	$13.50	7 x 2½ in.	$20.00
5 Figures counting 100,000, in case	5 x 1¾ "	16.00	8 x 2½ "	24.00
6 Figures counting 1,000,000, in case	5½ x 1¾ "	20.00	9 x 2½ "	28.00

WATER GAUGES.

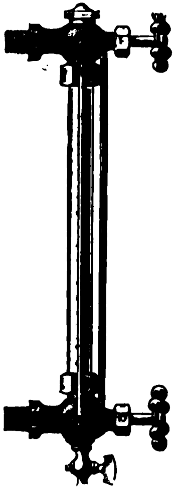


FIG. 1297, 2 ROD

	Two-Rod.	Three-Rod With Regrinding Valves.	Four-Rod With Regrinding Valves.
All finished, ⅝ glass, ½ in. pipe, each	$3.75	$5.00	$6.50
All finished, ¾ glass, ¾ in. pipe, each	8.00	9.50	10.00

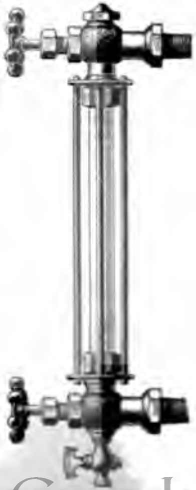


FIG. 1297, 3 ROD

PRESSURE OR VACUUM GAUGES.

FIG. 30½ PRICES, INCLUDING COCK.

Size, Diameter of Dial	2½ in.	3 in.	4½ in.	5 in.	5½ in.	6 in.	6¾ in.	8½ in.
Iron Case, Nickel-Plated Ring	....	....	**$8.20**	**$8.20**	**$10.25**	**$13.50**	**$16.60**	**$22.75**
Brass Case	**$8.00**	**$8.00**	**10.00**	**11.00**	**12.00**	**16.00**	**20.00**	**30.00**
Nickel-Plated Case	**8.60**	**8.60**	**11.00**	**12.00**	**13.25**	**17.50**	**22.00**	**32.50**

In ordering always specify whether Vacuum or Pressure is wanted. If Pressure Gauge, state maximum pressure or desired graduation.

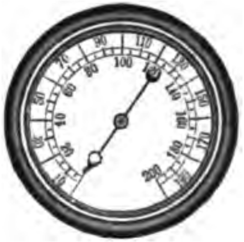


FIG. 30½

COMBINATION WATER PRESSURE GAUGE.

SHOWS PRESSURE IN POUNDS AND EQUIVALENT HEIGHT OF WATER IN FEET.

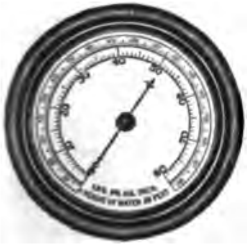


FIG. 1298

FIG. 1298. PRICES, INCLUDING COCK.

Size, Diameter of Dial	5½ in.	6 in.	6¾ in.	8½ in.
Iron Case, Nickel-Plated Ring	**$14.25**	**$16.50**	**$20.60**	**$30.75**
Brass Case	**16.00**	**20.00**	**25.00**	**40.00**
Nickel-Plated Case	**17.25**	**21.50**	**27.00**	**42.50**

Always state maximum pressure or height of water.

RECORDING PRESSURE AND VACUUM GAUGES.

FIG. 1299. PRICES.

Nickel-Plated, including Ink and 100 Charts	**$50.00**
Polished Aluminum, including Ink and 100 Charts	**60.00**
Electric Alarm Attachment (extra)	**10.00**

In ordering gauges, state maximum working pressure.

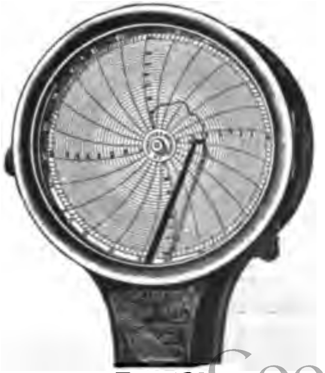


FIG. 1299

DOUBLE GATE VALVES. BRONZE.

TESTED AT 300 LBS. PRESSURE PER SQUARE INCH, WATER PRESSURE.

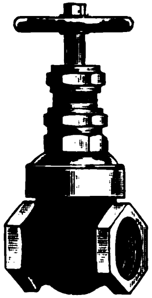


FIG. 2

Style Bronze up to 2-in. Screwed Ends.

FIG. 2. BRONZE.

Sizes, Inches.	½	¾	1	1¼	1½	2	2½	3
Screwed Ends	$1.40	1.80	2.35	3.40	4.40	6.25	13.75	15.50
Flanged Ends	3.40	3.70	4.15	5.70	7.40	11.00	18.75	21.50
For Slide Stem and Lever, add to list.	.80	.80	.80	1.00	1.00	1.25	1.75	2.00

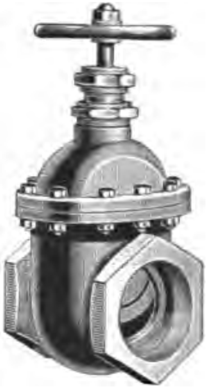


FIG. 2

Style Iron Body, Bronze Mounted up to 6-in. Screwed Ends.

DOUBLE GATE VALVES. IRON BODY. BRONZE MOUNTINGS.

TESTED AT 300 LBS. PRESSURE PER SQUARE INCH, WATER PRESSURE.

FIG. 2. IRON BODY, BRONZE MOUNTED.

Sizes, Inches.	2	2½	3	3½	4	4½	5	6	7	8	10	12
Screwed Ends	$7.00	10.25	12.25	16.50	18.00	23.00	25.00	30.50	38.00	45.00	64.00	82.50
Flanged Ends	7.50	10.75	13.25	17.50	18.50	23.50	25.50	31.00	38.00	43.50	64.50	80.00
Hub or Bell Ends	7.00	10.00	14.50	16.00	17.00	22.00	24.00	28.00	37.00	42.00	60.00	76.00
Spigot Ends	7.25	10.25	15.00	16.50	17.50	22.50	24.50	28.75	38.00	43.25	62.50	79.50
For Slide Stem and Lever add to List	1.25	1.75	2.00	2.00	2.00	2.25	2.25	2.25	2.25	2.25	3.25	4.00
For Outside Screw Cast-Iron Stand, add to List	......	......	......	......	......	......	......	7.50	12.25	12.50	14.50	14.75
For Outside Screw and Yoke, add to List	......	......	8.50	9.25	10.00	11.00	12.00	14.00	16.00	18.00	23.00	27.50

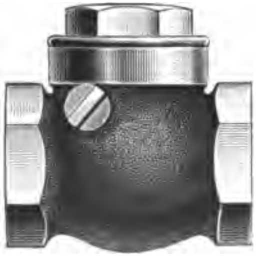


FIG. 107

Screwed Ends. Style of all sizes up to 2½ in. Sizes 3 inches and above made with Bolted Cover.

HORIZONTAL SWING CHECK VALVES. ALL BRONZE.

TESTED AT 300 LBS. PRESSURE PER SQUARE INCH, WATER PRESSURE. FIG. 107. BRONZE.

Sizes, Inches.	½	¾	1	1¼	1½	2	2½	3
Screwed Ends	$1.40	1.75	2.15	3.00	3.65	5.25	8.50	15.00
Flanged Ends	3.40	3.75	4.15	5.30	6.75	10.00	14.00	21.50

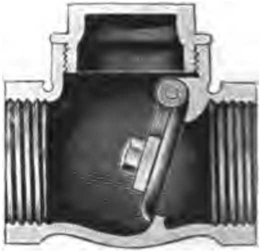


FIG. 107

Showing style of Hinge and Adjustable Gate.

HORIZONTAL SWING CHECK VALVES. IRON BODY, BRONZE MOUNTINGS.

(Not Illustrated.)

TESTED AT 300 LBS. WATER PRESSURE PER SQUARE INCH.

FIG. 107. IRON BODY WITH BRASS MOUNTINGS.

Sizes, Inches.	2½	3	3½	4	4½	5	6	7	8	9	10	12
Screwed Ends	$7.75	9.75	14.50	20.50	23.00	25.50	31.00	41.50	44.50	62.50	77.50	97.00
Flanged Ends	8.75	11.00	15.50	21.50	24.00	27.00	32.50	43.00	46.00	62.00	76.50	95.00
Hub or Bell Ends	......	10.25	14.25	20.50	......	25.00	28.50	......	43.00	61.00	73.00	92.00

WROUGHT IRON PIPE & CASING

Butt Welded, proved to 300 pounds per square inch, hydraulic pressure.
Lap Welded, proved to 500 pounds per square inch, hydraulic pressure.

STANDARD, EXTRA AND DOUBLE EXTRA STRONG WROUGHT-IRON PIPE, REVISED LISTS, ADOPTED FEBRUARY 15, 1900. SIZES, WEIGHTS, ETC.

Nominal Size (inside diameter) in.	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8
STANDARD PIPE.																		
PRICE, PER FT., Standard, Black... **" " Standard, Galv......**	$.055	.055	.055	.085	.115	.165	.225	.27	.36	.575	.755	.95	1.08	1.30	1.45	1.88	2.35	2.82
Actual Outside Diameter, in...............	.405	.54	.675	.84	1.05	1.315	1.66	1.9	2.37	2.87	3.5	4.0	4.5	5.0	5.56	6.62	7.62	8.62
Nominal Weight, per ft., lbs..............	.24	.42	.56	.84	1.12	1.67	2.24	2.68	3.61	5.74	7.54	9.00	10.66	12.49	14.5	18.76	23.27	28.18
No. of Threads per in. of Screw..........	27	18	18	14	14	11½	11½	11½	11½	8	8	8	8	8	8	8	8	8
X STRONG PIPE.																		
PRICE, PER FT..............................	$.11	.11	.11	.12	.15	.22	.30	.36	.50	.81	1.05	1.33	1.50	1.95	2.16	2.90	3.80	4.30
Actual Outside Diameter, in.....,.........	.405	.54	.675	.84	1.05	1.315	1.66	1.9	2.37	2.87	3.5	4.	4.5	5.0	5.56	6.62	7.62	8.62
Nominal Inside Diameter, in.............	.205	.294	.421	.542	.736	.951	1.27	1.49	1.93	2.31	2.89	3.35	3.81	4.28	4.81	5.75	6.62	7.62
Nominal Weight per ft., lbs................	.29	.54	.74	1.09	1.39	2.17	3.00	3.63	5.02	7.67	10.25	12.47	14.97	18.22	20.54	28.58	37.67	43.0
XX STRONG PIPE.																		
PRICE, PER FT.......................................				$.25	.30	.37	.52	.65	.95	1.37	1.92	2.45	2.85	3.30	3.80	5.30	6.25	7.20
Actual Outside Diameter, in.........................				.84	1.05	1.315	1.66	1.9	2.37	2.87	3.5	4.0	4.5	5.0	5.56	6.62	7.62	8.62
Nominal Inside Diameter, in.........................				.224	.422	.587	.885	1.08	1.49	1.75	2.28	2.71	3.13	3.56	4.06	4.87	5.87	6.87
Nominal Weight, per ft., lbs.........................				1.70	2.44	3.65	5.20	6.40	9.02	13.68	18.56	22.75	27.48	32.53	38.12	53.11	62.38	71.62

STANDARD WEIGHT LAP-WELDED CASING.

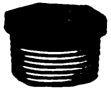
REVISED LIST, ADOPTED FEBRUARY 22, 1899.

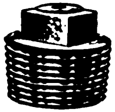
Nom. Size (in. dia.) in.	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4¼	4½	4¾	5	5 3/16	5⅝	6¼	6⅝	7¼	7⅝	8¼	8⅝	9⅝	10⅝
PRICE, PER FT..........	$.23	.29	.32	.35	.41	.45	.48	.56	.60	.64	.68	.78	.82	87	1.05	1.16	1.24	1.36	1.55	1.61	1.76	2.20	2.68
Actual Outside Dia........	2¼	2½	2¾	3	3¼	3½	3¾	4	4¼	4½	4¾	5	5¼	5½	6	6⅝	7	7⅝	8	8⅝	9	10	11
Nominal Weight, per ft..	2.22	2.82	3.13	3.45	4.10	4.45	4.78	5.56	6.0	6.36	6.73	7.8	8.2	8.62	10.46	11.58	12.34	13.55	15.41	16.07	17.60	21.90	26.72
No. Threads per Inch of Screw..............	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	11½	11½	11½	11½	11½

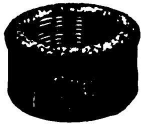
FITTINGS FOR WROUGHT-IRON PIPE.

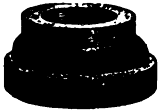
SIZE, INCHES	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Couplings, Wrought	$.05	$.06	$.07	$.10	$.13	$ .17	$ .21	$.28	$.40	$.60	$.80	$1.00	$1.50	$1.65	$2.40
“ **Mal., R. H**	.03	.04	.07	.10	.14	.20	.25	.35	....	....	....	....	....	....	....
“ **Wrought, Galv**	.06	.08	.10	.13	.18	.25	.32	.40	.55	.80	1.05	1.40	2.00	2.25	3.25
“ **Mal., R. H . Galv**	.05	.07	.10	.17	.23	.30	.40	.55	....	....	....	....	....	....	....
“ **Mal., R. & L.**	.04	.05	.08	.12	.16	.25	.36	.52	....	....	....	....	....	....	....
“ **Mal., R. & L , Galv.**	.06	.08	.10	.17	.25	.35	.55	.75	....	....	....	....	....	....	....
Elbows, Cast	.05	.05	.06	.08	.10½	.16	.20	.28	.50	.75	1.05	1.20	1.75	2.00	2.75
“ **Mal**	.04	.06	.10	.15	.22	.25	.35	.50	.80	1.50	2.25	3.00	....	....	....
“ **Cast, Galv**	.10	.10	.12	.16	.21	.32	.40	.56	1.00	1.50	2.10	2.40	3.50	4.00	5.50
“ **Mal., Galv**	.05	.08	.14	.20	.32	.40	.60	.90	1.35	2.60	3.75	5.00	....	....	....
“ **Cast, Red'ng & R. & L**	.06	.06	.07	.09	.12	.18	.23	.32	.60	.85	1.20	1.40	2.00	2.30	3.15
“ **Cast, Red'ng Galv**	....	.12	.14	.18	.24	.36	.46	.64	1.20	1.70	2.40	2.80	4.00	4.60	6.30
Elbows, 45°, Cast	.06	.06	.07	.10	.12	.19	.24	.34	.60	.90	1.25	1.45	2.20	2.50	3.45
“ **45°, Mal.**	....	.10	.12	.18	.26	.36	.54	.82	1.25	....	....	....	....	....	....
“ **45°, Cast, Galv**	.12	.12	.14	.20	.24	.38	.48	.68	1.20	1.80	2.50	2.90	4.40	5.00	6.90
“ **45°, Mal. Galv**	....	.15	.20	.25	.40	.50	.85	1.35	2.00	....	....	....	....	....	....
Tees, Cast	.08	.08	.09	.12	.15	.23	.29	.41	.73	1.10	1.50	1.75	2.55	3.00	4.00
“ **Mal**	.07	.08	.11	.15	.25	.30	.45	.60	1.05	1.70	2.50	3.40	....	....	....
“ **Cast, Galv**	.16	.16	.18	.24	.30	.46	.58	.82	1.46	2.20	3.00	3.50	5.10	6.00	8.00
“ **Mal., Galv**	....	.10	.16	.20	.38	.50	.70	1.00	1.90	3.00	4.25	5.75	....	....	....
“ **Reducing, Cast**	....	.09	.10	.14	.17	.27	.33	.47	.83	1.25	1.75	2.00	2.95	3.50	4.60
“ **Reducing, Cast, Galv**	....	.18	.20	.28	.34	.54	.66	.94	1.66	2.50	3.50	4.00	5.90	7.00	9.20
Crosses, Cast	....	.15	.16	.22	.27	.42	.53	.75	1.30	2.00	2.70	3.15	4.60	5.50	7.25
“ **Mal**	.08	.10	.12	.20	.30	.40	.60	1.00	1.75	3.00	3.25	5.25	....	....	....
“ **Cast, Galv**	....	.30	.32	.44	.54	.84	1.06	1.50	2.60	4.00	5.40	6.30	9.20	11.00	14.50
“ **Mal., Galv**	....	.15	.17	.25	.45	.60	.90	1.50	2.75	4.25	5.00	8.00	....	....	....
“ **Reducing, Cast**	....	....	.18	.25	.30	.46	.60	.83	1.45	2.20	3.00	3.50	5.10	6.00	8.00
“ **Reducing, Cast, Galv.**	....	....	....	.50	.60	.92	1.20	1.66	2.90	4.40	6.00	7.00	10.20	12.00	16.00

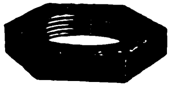
FITTINGS FOR WROUGHT-IRON PIPE.

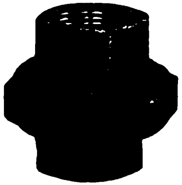












Sizes, Inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
*Bushings, Cast		.04	.04	.05	.06	.07	.09	.14	.21	.30	.40	.50	.75	.93	1.25
" Mal		.04	.04	.05	.06	.07	.09	.14	.21						
" Cast, Galv		.08	.08	.10	.12	.14	.18	.28	.42	.60	.80	1.00	1.50	1.85	2.50
" Mal., Galv		.08	.08	.10	.12	.14	.18	.28	.42						
Plugs, Cast	.02	.02	.02	.03	.04	.05	.07	.10	.18	.25	.38	.42	.65	.88	1.20
" Mal	.03	.03	.05	.08	.10	.16	.19	.30							
" Cast, Galv	.04	.04	.04	.06	.08	.10	.14	.20	.36	.50	.76	.84	1.30	1.75	2.40
" Mal., Galv	.05	.05	.07	.11	.15	.25	.30	.45							
Caps, Cast								.26	.40	.54	.75	.87	1.05	1.20	1.55
" Mal	.03	.04	.05	.08	.12	.16	.24	.32	.45	.85	1.50	2.00			
" Cast, Galv								.52	.80	1.08	1.50	1.74	2.10	2.40	3.10
" Mal., Galv	.04	.05	.08	.12	.17	.24	.38	.52	.76	1.30	2.25	3.00			
Reducers, Cast								.43	.60	.80	1.00	1.35	1.85	2.00	2.70
" Mal	.03	.03	.05	.10	.16	.20	.28	.45	.70	1.00	1.50	1.85			
" Cast, Galv								.86	1.20	1.60	2.00	2.70	3.70	4.00	5.40
" Mal., Galv		.05	.08	.15	.25	.35	.45	.75	1.05	1.65	2.40	3.05			
Locknuts, Cast								.25	.27	.34	.47	.64	.85	.90	1.30
" Mal	.02	.03	.04	.05	.07	.09	.11	.18	.40	.50					
" Cast, Galv								.50	.54	.68	.94	1.28	1.70	1.80	2.60
" Mal., Galv	.03	.04	.05	.07	.10	.14	.20	.30	.55	.70					
Unions, Mal	.18	.20	.22	.27	.33	.46	.58	.75	1.55	2.10	3.65	4.35			
" Mal., Galv	.27	.30	.33	.40	.50	.70	.00	1.15	2.35	3.15	5.50	6.50			

	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Flange Unions, Cast			.40	.46	.52	.64	.78	1.00	1.25	1.50	1.80	2.10	2.70	3.15	3.95
" " Mal			1.25	1.40	1.60	2.00	2.50	3.00	3.50	4.40	5.25	6.00	7.00	8.00	9.00
" " Cast, Galv			.80	.92	1.04	1.28	1.56	2.00	2.50	3.00	3.60	4.20	5.40	6 30	7.90
" " Mal., Galv			2.50	2.80	3.20	4.00	5.00	6.00	7.00	8.80	10.50	12.00	14.00	16.00	18.00

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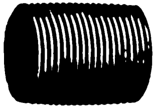
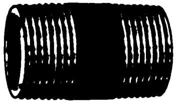
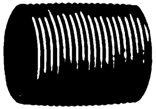
*NOTE: Bushings reducing one size only, up to and including 2½ inches, are malleable. Cast iron Bushings 3 inches and larger, reduce one or more sizes.

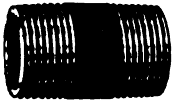
WROUGHT-IRON NIPPLES.





Size	⅛, ¼ or ⅜			½			¾			1			1¼		
Length, Close	¾, ⅞, 1			1⅛			1⅜			1½			1⅝		
“ Short	1½			1½			2			2			2½		
“ Long	2 to 3½			2 to 3½			2½ to 4			2½ to 4			3 to 4½		
	Right	R.&L.	Galv.	Right	R.&L.	Galv.	Right	R.&L.	Galv.	Right	R.&L.	Galv.	Right	R.&L.	Galv.
Price, Close or Short	$0.04	$0.05	$0.06	$0.05	$0.07	$0.06	$0.06	$0.08	$0.08	$0.08	$0.11	$0.11	$0.11	$0.15	$0.17
“ Long	.06	.08	.11	.07	.10	.11	.09	.12	.14	.13	.18	.19	.17	.23	.29
“ 4 in. Long	.07	.09	.12	.08	.11	.13	....	....	....	....	....	....	....	....	....
“ 5 “	.08	.11	.15	.10	.13	.16	.11	.15	.18	.15	.20	.24	.20	.27	.32
“ 6 “	.10	.13	.17	.12	.16	.18	.13	.17	.21	.18	.24	.28	.24	.32	.38
“ 7 “	.12	.16	.21	.14	.18	.23	.17	.23	.26	.23	.31	.34	.29	.39	.45
“ 8 “	.14	.18	.24	.16	.21	.26	.18	.25	.29	.25	.33	.38	.33	.45	.51
· 9 “	.15	.20	.26	.18	.24	.28	.20	.27	.32	.28	.37	.42	.36	.50	.57
“ 10 “	.17	.23	.29	.20	.27	.31	.22	.29	.35	.31	.41	.47	.40	.55	.63
“ 11 “	.18	.25	.31	.22	.29	.33	.24	.32	.38	.34	.45	.51	.44	.60	.69
“ 12 “	.19	.27	.34	.23	.31	.36	.26	.35	.41	.36	.48	.55	.47	.65	.75

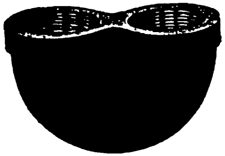


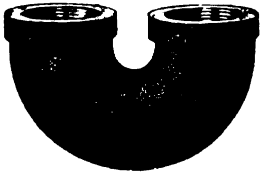


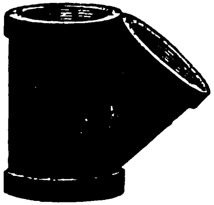
Size	1½			2			2½			3			3½		
Length, Close	1¾			2			2½			2½			2¾		
“ Short	2½			2½			3			3			4		
“ Long	3 to 4½			3 to 4½			3½ to 5			3½ to 5			4½ to 6		
	Right	R.&L.	Galv.	Right	R.&L.	Galv.	Right	R.&L.	Galv.	Right	R.&L.	Galv.	Right	R.&L.	Galv.
Price, Close or Short	$0.13	$0.18	$0.21	$0.18	$0.24	$0.27	$0.39	$0.52	$0.56	$0.48	$0.65	$0.70	$0.75	$1.00	$1.20
“ Long	.20	.27	.35	.27	.36	.47	.59	.79	.86	.72	.96	1.10	1.05	1.40	1.70
“ 5 in. Long	.25	.34	.39	.32	.43	.52	....	....	....	....	....	....	....	....	....
“ 6 “	.29	.39	.46	.38	.51	.61	.68	.91	1.00	.85	1.13	1.30	....	....	....
“ 7 “	.36	.48	.55	.50	.67	.74	.90	1.20	1.26	1.08	1.44	1.60	1.30	1.75	2.10
“ 8 “	.40	.52	.63	.54	.72	.83	.97	1.30	1.41	1.20	1.60	1.80	1.45	1.95	2.35
“ 9 “	.45	.60	.70	.59	.80	.93	1.06	1.40	1.56	1.33	1.77	2.00	1.60	2.15	2.60
“ 10 “	.50	.67	.77	.65	.87	1.03	1.17	1.55	1.71	1.45	1.93	2.20	1.75	2.35	2.85
“ 11 “	.54	.72	.84	.72	.96	1.13	1.26	1.68	1.86	1.58	2.10	2.40	1.90	2.55	3.15
“ 12 “	.59	.80	.91	.77	1.03	1.23	1.35	1.80	2.01	1.70	2.27	2.60	2.05	2.75	3.40

60% to be added to the Price of R. & L. Black Nipples, for R. & L. Galvanized.

FITTINGS FOR WROUGHT IRON PIPE.

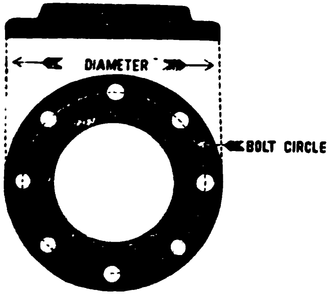






Size, Inches.	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Return Bends, Cast, R. H., Close Pattern.	$0.18	$0.20	$0.22	$0.28	$0.40	$0.57	$1.20	$1.70	....	....	....	....
" " Mal., " " "	.13	.25	.35	.50	.75	1.00	....	....	....	....	....	....
" " Cast, " Galv., " "	.36	.40	.44	.56	.80	1.14	2.40	3.40	....	....	....	....
" " Mal , " " " "	.25	.35	.55	.75	1.15	1.65	....	....	....	....	....	....
" " Cast, R. & L., " " "	.21	.23	.26	.33	.46	.66	1.40	1.95	....	....	....	....
" " Mal., " " " "	.15	.30	.45	.60	.90	1.25	....	....	....	....	....	....
" " Cast, R H., Open "	....	.26	.30	.40	.55	.80	1.35	2.20	....	....	....	....
" " Mal., " " "	.15	.30	.50	.65	.85	1.25	2.00	3.00	....	....	....	....
" " Cast, " Galv., " "	....	.52	.60	.80	1.10	1.60	2.70	4.40	....	....	....	....
" " Mal., " " " "	.25	.45	.70	.90	1.25	2.00	3.50	5.00	....	....	....	....
" " Cast, R & L , " "	....	.30	.35	.46	.64	.92	1.55	2.50	....	....	....	....
" " Mal, " " " "	.20	.38	.60	.80	1.05	1.55	2.50	3.75	....	....	....	....
Y Branches, Cast...........................	.20	.28	.34	.54	.66	.94	1.66	2.50	3.50	4.00	7.00	9.20
" " Mal...........................	.25	.40	.60	.80	1.00	1.70	2.00	3.00	....	....	....	....
" " Cast, Galv...........................	.40	.56	.68	1.08	1.32	1.88	3.32	5.00	7.00	8.00	14.00	18 40
" " Mal. "	.38	.60	.90	1.25	1.50	2.50	3.00	4.50	....	....	....	....
" " Cast, Reducing...........................	.23	.33	.40	.62	.76	1.08	1.90	2.90	4.00	4.60	8.00	10.60

STANDARD FLANGES.

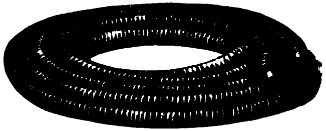


Size, Inches.	Price, Faced, Each.	Price, Faced and Drilled, Each.
2 x 6	$1.20	$1.50
2½ x 7	1.40	2.00
3 x 7½	1.60	2.25
3½ x 8½	1.80	2.50
4 x 9	2.15	3.00
4½ x 9¼	2.50	3.35
5 x 10	2.80	3.65
6 x 11	3.20	4.00
7 x 12½	4.35	5.75
8 x 13½	5.00	6.50
9 x 15	6.75	8.25
10 x 16	7.75	9.25
12 x 19	10.50	12.50
14 x 21	13.75	16.00
16 x 23½	22.50	26.00

RUBBER WATER HOSE.

Internal Diameter, Inches.	2-Ply. Conducting, per foot.	3-Ply. Hydrant, per foot.	4-Ply. Engine, per foot.	5-Ply. Engine per foot.	6-Ply. Engine, per foot.
½	$0.20	$0.25	$0.30	$0.37	$0.45
¾	.25	.30	.37	.46	.55
1	.33	.40	.50	.62	.75
1¼	.42	.50	.62	.77	.93
1½	.50	.60	.75	.93	1.12
2	.66	.80	1.00	1.25	1.50
2½	....	1.00	1.25	1.56	1.87
3	....	....	1.50	1.87	2.25
3½	....	....	....	2.18	2.62
4	....	....	....	....	3.00

EXTRA FOR WINDING WATER HOSE WITH GALVANIZED STEEL WIRE.

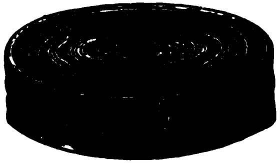


Internal Diameter, Inches.	3-Ply.	4-Ply.	5-Ply.	6-Ply.
½ in. per foot.	$0.03	$0.04	$0.05	$0.06
¾ " "	.04	.05	.06	.07
1 " "	.05	.07	.08	.09
1¼ " "	.07	.08	.09	.10
1½ " "	.08	.09	.10	.11
2 " "	.10	.11	.12	.13
2½ " "	.12	.13	.14	.15

COTTON RUBBER-LINED GARDEN HOSE.

Internal Diameter, Inches.	2-Ply, per foot.	3-Ply, per foot.	4-Ply, per foot.
½	$0.20	$0.25	$0.30
¾	.25	.30	.37
1	.33	.40	.50

LINEN HOSE, SEAMLESS, UNLINED AND RUBBER LINED.



Internal diameter, inches.	½	¾	1	1¼	1½	2	2½	3
"Standard" Unlined, per foot........	....	....	$0.20	$0.22	$0.26	$0.30	$0.35	$0.50
" Rubber Lined, per foot........	$0.20	$0.25	.35	.50	.55	.65	.75	1.00
Underwriters, Unlined, per foot........	....	....	.27	.30	.33	.42	.50	....

COTTON MILL HOSE.

SEAMLESS WOVEN AND RUBBER LINED.

Internal diameter, inches	1	1¼	1½	2	2½	3
Price per foot	$0.36	$0.45	$0.50	$0.60	$0.70	$1.00

"SMOOTH BORE" RUBBER SUCTION HOSE.

Internal diameter, inches	1½	2	2½	3	3½	4	4½	5	6	8	10
On Spiral Tinned Iron, per ft.	$1.70	$2.60	$3.50	$4.50	$5.50	$6.50	$7.50	$8.50	$10.50	$16.50	$22.50

HARD RUBBER AND AGRICULTURAL SMOOTH-BORE SUCTION HOSE.

Internal diameter, inches	½	¾	1	1¼	1½	2	2½	3
Hard Rubber Suction Hose, per foot	$0.55	$0.66	$0.76	$0.93	.....	.....	.....	.....
Agricultural Suction Hose, "	.....	.....	.76	.93	$1.13	$1.50	$1.88	$3.50

EXTRA HEAVY STEAM AND OIL HOSE.

Internal Diameter, inches	½	¾	1	1¼	1½	2	2½
3 Ply, for 20 lbs. steam, per foot	$0.43	$0.51	$0.67	$0.85	$1.02	$1.34	$1.66
4 " " 35 " " "	.51	.67	.83	1.04	1.25	1.66	2.08
5 " " 50 " " "	.63	.83	1.03	1.30	1.56	2.07	2.60
6 " " 75 " " "	.76	1.00	1.24	1.56	1.87	2.49	3.12
7 " " 90 " " "	.89	1.17	1.45	1.82	2.18	2.90	3.64
8 " " 100 " " "	1.02	1.34	1.66	2.08	2.50	3.32	4.16

*RUBBER TUBING.

Internal diameter, inches	⅛	3-16	¼	5-16	⅜	½	⅝	¾	1
Plain, per foot	$0.08	$0.12	$0.16	$0.18	$0.20	$0.25	$0.30	$0.35	$0.45
Cloth inserted, per foot	.10	.14	.18	.20	.23	.28	.33	.38	.50

* Made in 12-feet lengths.

FIG. 504, BRASS HOSE COUPLINGS.

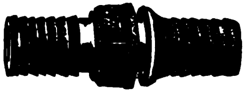


FIG. 504

Size, Inches	½	¾	1
Fig. 504, per dozen	$3.00	$3.00	$4.50

FIG. 497, BRASS HOSE COUPLINGS.

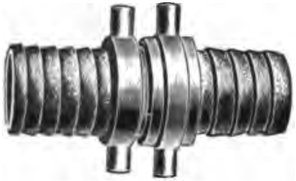


FIG. 497

Size, Inches	1¼	1½	2	2½	3	4	5	6
Fig. 497, per dozen	$10.00	$14.00	$30.00	$48.00	$76.00	$150.00	$250.00	$350.00

IMPROVED DOUBLE HOSE CLAMPS.

Size of Hose, in Inches, 3 ply	½	¾	1	1¼	1½	2	2½
Per dozen	$0.60	$0.60	$2.00	$2.50	$3.00	$4.00	$7.00

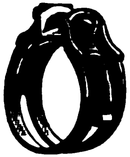


FIG. 1272

FIG. 58, BRASS HOSE STRAPS.

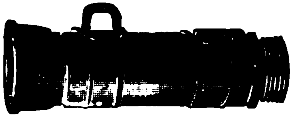


FIG. 58

No.	Hose.	Long.	Per Dozen.	No.	Hose.	Long.	Per Dozen.
2	½ in.	3⅜ in.	$0.40	10	1 in.	5 in.	$0.80
4	½ "	3¾ "	.40	12	1 "	5⅜ "	.80
6	¾ "	4⅛ "	.60	14	1¼ "	6 "	1.00
8	¾ "	4¾ "	.60	16	1¼ "	6⅜ "	1.00

FIG 622, GLOBE SUCTION BASKET, TO TIE ON.

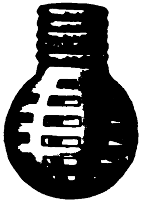


FIG. 622

Size, Inches	1	1¼	1½	2	2½
Black	$0.50	$0.50	$0.65	$1.00	$1.50
Galvanized Iron	.60	.60	.75	1.25	1.90
Brass	2.25	2.25	2.75	3.50	5.00

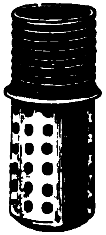


FIG. 750

BRASS SUCTION BASKETS.

FIG. 750. TO TIE ON.

Size, Inches	¾	1	1¼	1½	2
Price	$2.50	$3.00	$3.25	$4.00	$5.00

FIG. 751. TO SCREW ON

1½	2	2½	3	3½	4
$7.50	$7.50	$8.50	$10.00	$15.00	$20.00

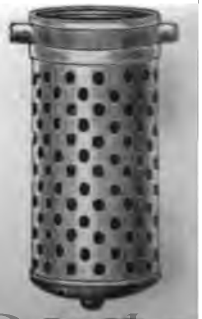


FIG. 751

"GEM" GRADUATING SPRAY PIPE.

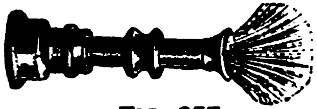


FIG. 357

Hose Thread, Inches.	¾	1
Per doz	$10.00	$15.00

"HOSFORD" HOSE PIPE.

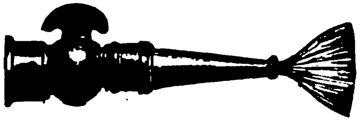


FIG. 66

Hose Thread, Inches.	¾	1
Per doz	$15.00	$18.00

HOSE NOZZLE, TO TIE ON.

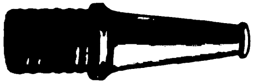


FIG. 502

Thread and Length, Inches.	¾ x 8½	1 x 4	1¼ x 4½
Per doz	$3.50	$4.00	$6.50

HOSE PIPE, SCREW TIP.

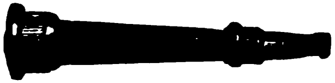


FIG. 499

Thread and Length, Inches.	¾ x 6	1 x 7¼	1 x 12
Per doz	$8.00	$9.00	$12.00

LARGE HOSE PIPE, SCREW TIP.

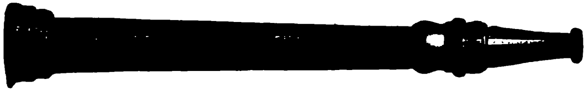


FIG. 496

Thread and Length, Inches.	1¼ x 12½	1½ x 18	2 x 20	2½ x 15	2½ x 30
Per doz	$21.00	$36.00	$50.00	$75.00	$144.00

HOSE PIPE WITH COCK ON END, SCREW TIP.

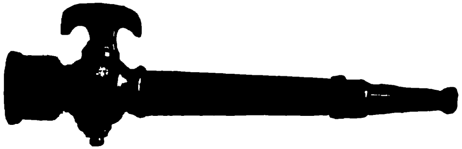


FIG. 501

Thread and Length, Inches.	¾ x 8	¾ x 12	1 x 12	1¼ x 12	1½ x 12½	2 x 30
Per doz	$13.00	$18.00	$20.00	$40.00	$55.00	$136.00

BRASS HOSE PIPE SPRINKLERS.

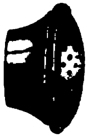


FIG. 503

Diameter of Face, Inches.	1⅝	1⅝	2⅜	2⅜	2¾
Size Hose Pipe	¾	1	1¼	1½	2
Price, per doz	$3.50	$3.50	$6.00	$6.00	$9.00

LUNKENHEIMER BRASS GOODS.

GLOBE VALVE.

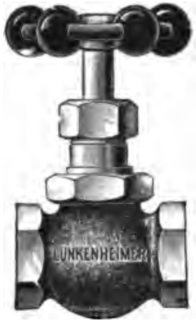


FIG. 6

ANGLE VALVE.

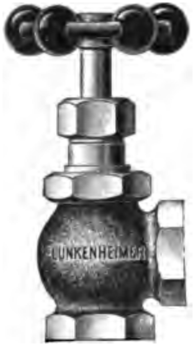


FIG. 1284

HORIZONTAL CHECK.

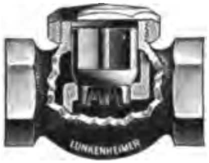


FIG. 28

VERTICAL CHECK.

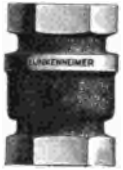


FIG. 1285

BALL CHECK.

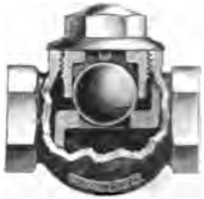


FIG. 1286

Size, Inches.	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. 6, Globe Valve, Brass, Each	$.70	$.70	$.85	$1.15	$1.45	$2.00	$2.80	$3.90	$6.20	$12.00	$16.50
Fig. 1284, Angle Valve, Brass Each	.70	.70	.85	1.15	1.45	2.00	2.80	3.90	6.20	12.00	16.50
Fig. 28, Horizontal Check Valve, Brass, Each	.50	.50	.60	.85	1.15	1.55	2.30	3.25	5.20	10.00	14.00
Fig. 1285, Vertical Check Valve, Brass, Each	.50	.50	.60	.85	1.15	1.55	2.30	3.25	5.20	10.00	14.00
Fig. 1286, Ball Check Valve, Horizontal, Brass, Each	....	....	1.10	1.60	2.30	3.10	4.00	6.20	9.40	18.00	25.00

HOR. SWING CHECK.

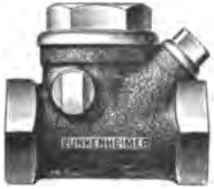


FIG. 1287

GATE VALVE.

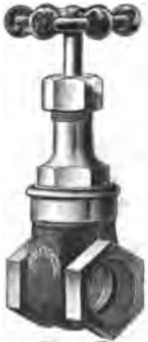


FIG. 7

"HANDY" GATE.

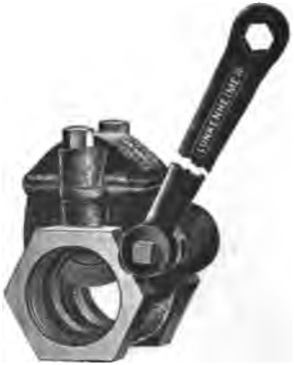


FIG. 163

LEVER THROTTLE.

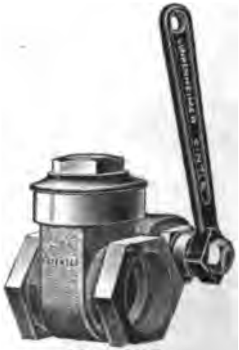


FIG. 162

COMPOSITION DISC GLOBE VALVE.

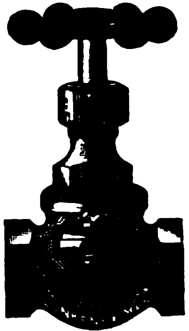


FIG. 5

Size, Inches.	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Fig. 1287, Horizontal Swing Check Valve, Brass, Each	$1.25	$1.25	$1.30	$1.75	$2.25	$3.25	$4.25	$6.25	$11.50	$16.00	....	....
Fig. 7, Double Disc Gate Valve, Brass, Each	1.10	1.10	1.30	1.90	2.50	3.50	5.00	7.50	14.00	20.00	....	....
Fig. 163, "Handy" Gate Valve, Brass Body, Each	....	....	1.60	1.80	2.50	3.50	5.00	7.50	13.50	19.00	$40.00	$60.00
Fig. 163, "Handy" Gate Valve, Ir. Body, Br. Mtd., Each	....	....	....	....	....	....	....	7.00	12.00	15.00	18.00	21.00
Fig. 162, Lever Throttle Valve, Brass, Each	....	....	....	3.00	4.00	5.00	7.00	10.00	19.00	....	....	....
Fig. 162, Lever Throttle Valve, Brass Mounted, Each	....	....	....	....	....	....	....	....	16.00	20.00	25.00	30.00
Fig. 5, Composition Disc. Globe Valve, Brass, Each	1.10	1.25	1.60	2.20	2.80	4 00	5.50	8.00	15.75	22.00	....	....

BRASS GLOBE, ANGLE VALVES, ETC.

GLOBE VALVE.

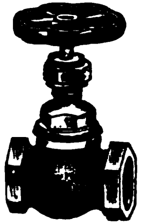


FIG. 753

GLOBE VALVE.

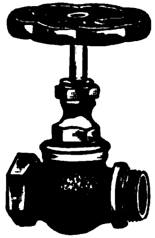


FIG. 98

GLOBE VALVE.

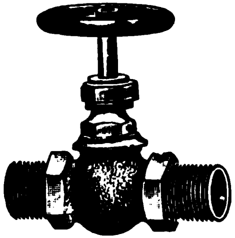


FIG. 100

ANGLE VALVE.

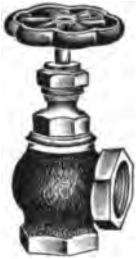


FIG. 567

ANGLE VALVE.

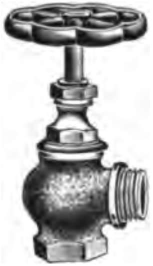


FIG. 99

ANGLE VALVE.

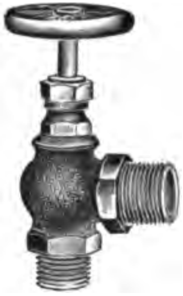


FIG. 101

Size, Inches.	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. 753, Rough	$0.72	$0.77	$1.00	$1.26	$1.80	$2.52	$3.50	$5.30	$10.00	$14.40
" 98, "	1.00	1.15	1.50	2.25	3.00	4.50	6.75	10.00	15.50	22.00
" 100, "	1.10	1.25	1.65	2.50	3.30	5.00	7.50	11.00	17.00	24.00
" 567, "	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
" 99, "	1.00	1.15	1.50	2.25	3.00	4.50	6.75	10.00	15.50	22.00
" 101, "	1.10	1.25	1.65	2.50	3.30	5.00	7.50	11.00	17.00	24.00

CROSS VALVE.

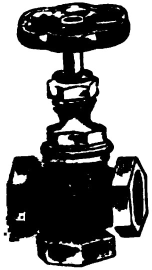


FIG. 568

GLOBE VALVE.

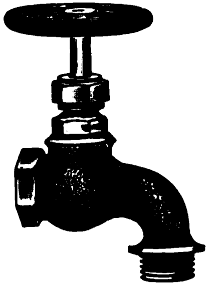


FIG. 102

ANGLE VALVE.

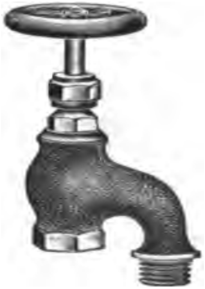


FIG. 103

GARDEN HOSE VALVE.

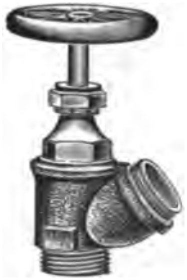


FIG. 104

GARDEN HOSE VALVE.

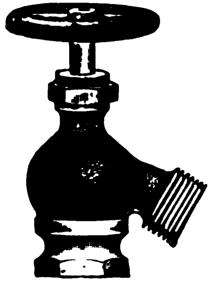


FIG. 105

Size, Inches.	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. 568, Rough	$1.25	$1.25	$1.50	$2.00	$2.50	$3.50	$5.00	$8.00	$16.00	$24.00
" 102, "				2.75	4.25	5.00				
" 103, "				2.75	4 25	5.00				
" 104, "					3.15	3.70	4.75	7 00	8.50	
" 105, "			1.65	1.65	2.20	3.40	4.75	7.00		

BRASS STEAM OR HEAVY WATER COCKS.

SQUARE HEAD.

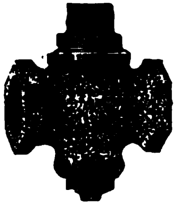


FIG. 725

TEE HANDLE.

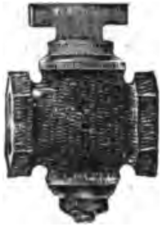


FIG. 131

FLAT HEAD.

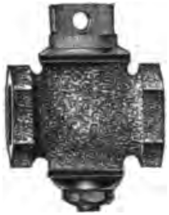


FIG. 132

SQUARE HEAD.

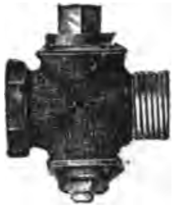


FIG. 133

THREE WAY.

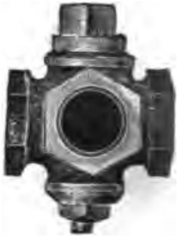


FIG. 726

Size, Inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. 725, 131 and 132, rough	$0.85	$1.00	$1.25	$1.70	$2.35	$3.70	$4.85	$7.30	$14.50	$22.50
" 133, "	1.35	1.45	2.00	2.50	3.00	5.35	6.75	9.85	17.50	25.75
" 726, "	...	...	2.50	3.00	3.75	5.75	7.15	11.00	18.75	26.00

BRASS SERVICE AND METER COCKS.

SQUARE HEAD.

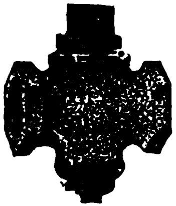


FIG. 134

TEE HANDLE.

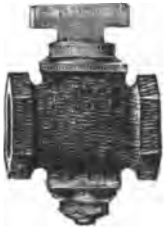


FIG. 135

FLAT HEAD.

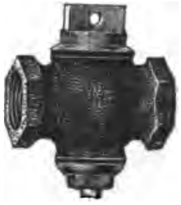


FIG. 727

SQUARE HEAD.

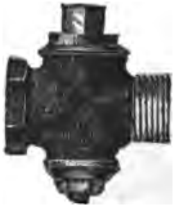


FIG. 136

FLAT HEAD.

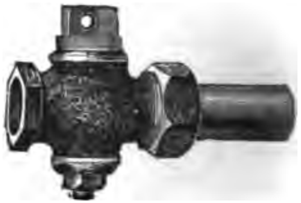


FIG. 137

Size, Inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. 134, rough	$0.75	$0.85	$0.95	$1.15	$1.50	$2.25	$3.10	$5.00	$11.00	$16.00
" 135, "	.75	.85	.95	1.15	1.50	2.25	3.10	5.00	11.00	16.00
" 727, "	.75	.85	.95	1.15	1.50	2.25	3.10	5.00	11.00	16.00
" 136, "	1.00	1.00	1.30	1.40	1.95	3.00	4.25	6.00	...	...
" 137, "	...	...	1.40	1.55	2.20	3.40	5.00	7.00	...	...

BRASS STOPS, HYDRANT COCKS, ETC.

ROUGH STOP.

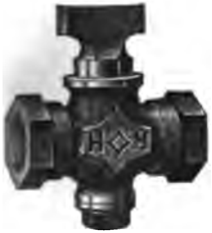


FIG. 408

ROUGH STOP AND WASTE.

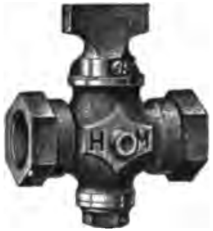


FIG. 1288

ROUGH STOP, LEVER HANDLE.

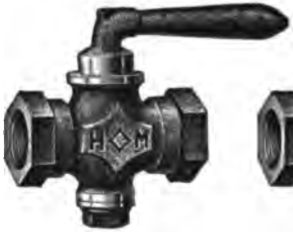


FIG. 1289

ROUGH STOP AND WASTE, LEVER HANDLE.

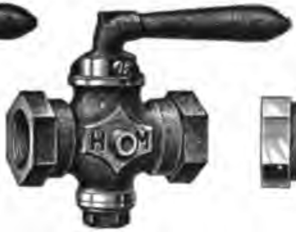


FIG. 1290

ROUGH STOP, LEVER HANDLE, ROUND WAY.

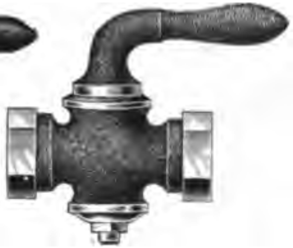


FIG. 1291

Size, Inches	3/8	1/2	5/8	3/4	1	1¼	1½	2
Fig. 408, per dozen	$13.00	$15.00	$18.00	$22.00	$32.00	$51.00	$71.00	$120.00
" 1288, "	15.00	17.00	20.00	24.00	35.00	55.00	77.00	130.00
" 1289, "	14.00	16.00	19.50	23.50	34.00	53.50	74.50	125.00
" 1290, "	16.00	18.00	21.50	25.50	37.00	57.50	80.50	135.00
" 1291, "		20.00	24.50	29.50	50.00	77.50	110.50	195.00

ROUGH STOP AND WASTE, LEVER HANDLE, ROUND WAY.

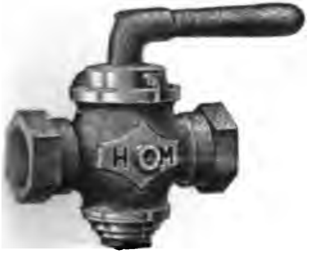


FIG. 1292

ROUGH STOP OR CURB COCK, ROUND WAY.

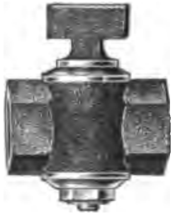


FIG. 1293

HYDRANT COCK, CHECK AND WASTE.

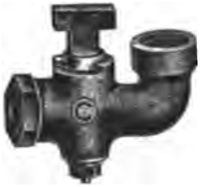


FIG. 754

CORPORATION STOP FOR MUELLER OR PAYNE TAPPING MACHINE.

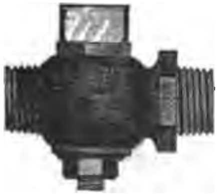


FIG. 12

COMPRESSION SILL COCK.

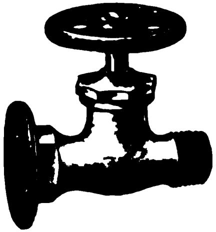


FIG. 1294

Size, Inches		1/2	5/8	3/4	1	1¼	1½	2
Fig. 1292, per dozen		$22.00	$26.50	$31.50	$53.00	$81.50	$116.50	$205.00
" 1293, "		12.00	17.00	18.00	30.00			
" 754, "		21.00	25.00	29.50	41.50	64 00		
" 12, "	Mueller	13.20	16 80	25.20	40.20	90.00		
" 12, "	Payne	16.00	20.00	29.00	46.00	90.00		
" 1294, "	Finished	22.00		24.00				
" 1294, "	Nickeled	25.00		27.00				

BRASS BIBBS, STOPS, ETC.

PLAIN BIBB FOR LEAD PIPE.

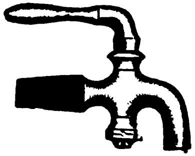


FIG. 109

PLAIN BIBB FOR IRON PIPE.

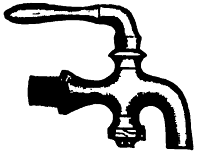


FIG. 573

HOSE BIBB FOR LEAD PIPE.

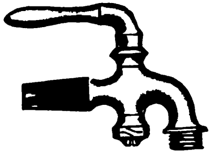


FIG. 110

HOSE BIBB FOR IRON PIPE.

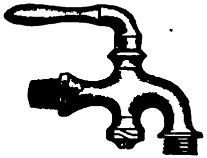


FIG. 724

STOP FOR IRON PIPE.

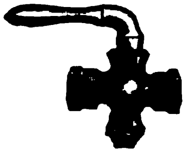


FIG. 575

Size, Inches	¼	⅜	½	⅝	¾	1	1¼	1½	2
Fig. 109, Rough, per dozen	$9.00	$11.00	$14.00	$16.00	$21.00	$32.00	$52.00	$72.00	$150.00
" 109, Finished, "	10.00	12.00	15.00	18.00	24.00	36.00	60.00	84.00	170.00
" 573, Rough, "	11.00	13.00	16.00	18.00	23.00	35.00	56.00	78.00	160.00
" 573, Finished, "	12.00	14.00	17.00	20.00	26.00	39.00	64.00	90.00	180.00
" 110, Rough, "	....	....	16.00	18.00	23.00	35.00	56.00	78.00	160.00
" 110, Finished, "	....	....	17.00	20.00	26.00	39.00	64.00	90.00	180.00
" 724, Rough, "	....	....	18.00	20.00	25.00	38.00	60.00	84.00	170.00
" 724, Finished, "	....	....	19.00	22.00	28.00	42.00	68.00	96.00	190.00
" 575, Rough, "	....	14.00	16.00	19.50	23.50	34.00	53.50	74.50	125.00
" 575, Finished, "	....	17.50	19.50	23.00	29.50	43.00	....	....	....

COMPRESSION BIBB FOR LEAD PIPE.

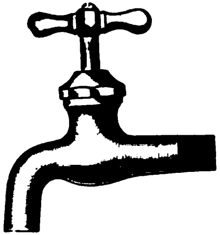


FIG. 111

COMPRESSION HOSE BIBB FOR LEAD PIPE.

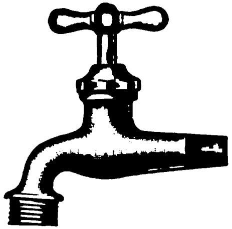


FIG. 112

COMPRESSION BIBB FOR IRON PIPE.

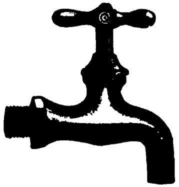


FIG. 723

COMPRESSION HOSE BIBB FOR IRON PIPE.

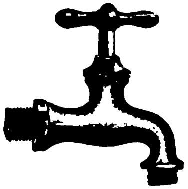


FIG. 574

COMPRESSION STOP FOR IRON PIPE.

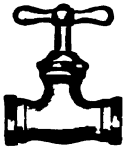


FIG. 114

Size, Inches	⅜	½	⅝	¾	1	1¼	1½	2
Fig. 111, Rough, per dozen	$9.50	$10.50	$12.00	$17.00	$30.00	$44.00	$68.00	$140.00
" 111, Finished, "	10.00	11.00	13.00	18.00	34.00	52.00	80.00	160.00
" 112, Rough, "	11.50	12.50	14.00	19.00	33.00	48.00	74.00	150.00
" 112, Finished, "	12.00	13.00	15.00	20.00	37.00	56.00	86.00	170.00
" 723, Rough, "	11.50	12.50	14.00	19.00	33.00	48.00	74.00	150.00
" 723, Finished, "	12.00	13.00	15.00	20.00	37.00	56.00	86.00	170.00
" 574, Rough, "	13.50	14.50	16.00	21.00	36.00	52.00	80.00	160.00
" 574, Finished, "	14.00	15.00	17.00	22.00	40.00	60.00	92.00	180.00
" 114, Rough, "	12.50	13.50	15.00	23.00	36.00	52.00	90.00	....
" 114, Finished, "	13.00	14.00	16.00	24.00	40.00	60.00	102.00	....

BRASS OIL AND GREASE CUPS, AIR AND CYLINDER COCKS.

PLAIN OIL CUP.

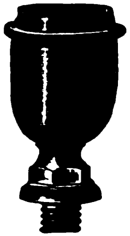


FIG. 119

HINGE LID OIL CUP.

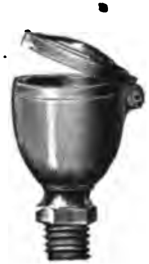


FIG. 120

"JEWEL" AUTOMATIC GREASE CUP.

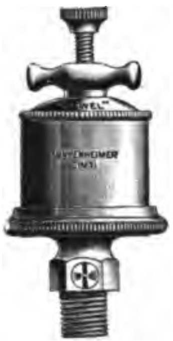


FIG. 588

FIG. 588. GREASE CUP. SIZES, PRICES, ETC.

Inside Diameter, Inches........	1	1¼	1½	2	2½	3
Shank Threaded, Inches.......	⅛	¼	¼	⅜	½	½
Capacity (Grease) Ounces.....	⅓	1	1½	3	6	10
Finished Brass, each................	$0.80	1.00	1.30	1.70	2.30	3.20

TEE HANDLE COCK.

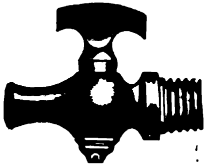


FIG. 124

TEE HANDLE BIBB

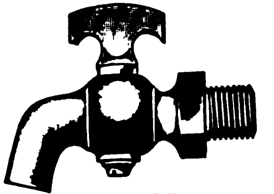


FIG. 125

OIL CUPS. SIZES, PRICES, ETC.

Diameter Body........	⅝	¾	⅞	1	1⅛	1¼	1½	1¾	2	2¼
Threaded	⅛	⅛	⅛	¼	¼	¼	⅜	⅜	½	½
Fig. 119	$0.25	$0.30	$0.35	$0.40	$0.50	$0.60	$0.90	$1.25	$1.75	$2.25
" 119, with T handle	....	.80	.90	1.00	....	1.50	2.00	2.50	3.00	3.75
" 120....................	....	....	.70	.85	....	1.20	1.60	2.10	2.70	....

COCKS. SIZES AND PRICES.

Sizes, Inches.	⅛	¼	⅜	½
Fig. 124..............	$0.40	$0.40	$0.50	$0.60
" 125..............	.70	.70	.80	.90

BRASS SIGNAL STOP AND SIGHT FEED OILER.

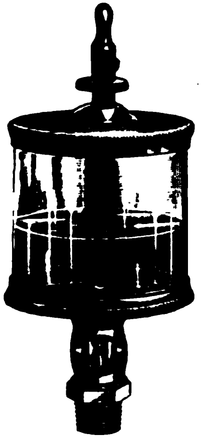


FIG. 130

FIG. 130. SIZES, PRICES, ETC.

No.	Capacity.	Height.	Diameter.	Shank.	Price per Doz.
4	1 oz.	5¼ In.	1 11/16 In.	¼ In.	$18.00
5	1½ "	5⅜ "	2 "	¼ "	21.00
6	2 "	5¾ "	2 1/16 "	⅜ "	24.00
7	4 "	6 1/16 "	2⅝ "	⅜ "	27.00
8	6 "	5 7/16 "	2 11/16 "	⅜ "	32.00
9	10 "	7 11/16 "	3⅜ "	½ "	40.00

PLAIN BRASS LUBRICATOR.

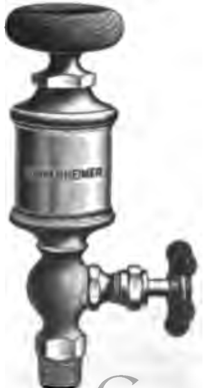


FIG. 128

FIG. 128. SIZES, PRICES, ETC.

Diameter Body, Inches......................	1	1¼	1½	1¾	2	2¼	2½	3	3½
Threaded for Iron Pipe......................	⅜	⅜	½	½	½	¾	¾	¾	¾
Each	$2.00	$2.20	$2.40	$2.60	$2.90	$3.25	$3.75	$4.75	$7.00

COMMON PIPE TONGS.

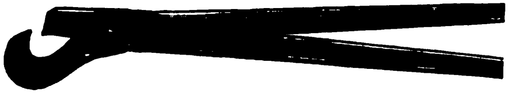


FIG. 373

Pipe, inches........	⅛	¼	⅜	½	¾	1	1¼
Price, each...........	$0.60	$0.65	$0.70	$0.75	$0.90	1.10	$1.30
Pipe, inches........	1½	2	2½	3	3½	4	5
Price, each...........	$1.50	$1.90	$2.50	$4.25	$4.50	$5.00	$8.00

BROWN'S ADJUSTABLE TONGS.

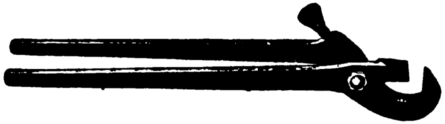


FIG. 377

Number........................	1	1½	2	3	4	5	6
Takes Pipe from, in.....	⅛ to ¾	⅜ to 1	½ to 1¼	1 to 2	1½ to 3	2½ to 4	3 to 5
Price, each.....................	$1.30	$1.65	$2.00	$3.00	$6.00	$11.00	$25.00

ROBBIN'S CHAIN TONGS

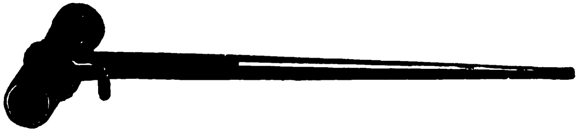


FIG. 755

Number.........................	2	3	4	5	6	7
Takes Pipe from, in	1 to 2	1¼ to 4	2 to 6	2½ to 8	4 to 10	4 to 16
Price, each......................	$5.50	$6.25	$9.00	$12.50	$16.00	$30.00

BROCK'S CHAIN TONGS.

FIG. 370

Number........................	0	1	2	3	4	5
Takes Pipe from, in......	⅛ to ¾	⅛ to 1½	¼ to 2½	¾ to 4	1½ to 8	2 to 12
Price, each.....................	$2.50	$3.50	$5.50	$7.50	$11.00	$18.00
Extra Chains, each	.75	1.00	1.50	2.50	4.00	6.00
Extra Jaws, pair...............	1.00	1.75	2.75	4.00	5.00	7.50

ALLIGATOR WRENCHES.

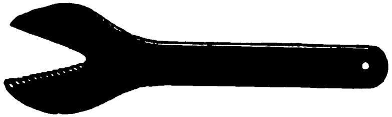


FIG. 782

Number	1	2	3	4	5
Takes Pipe from, in	⅛ to ⅜	⅜ to ¾	½ to 1¼	1¼ to 2	2 to 3
Price, per dozen.........	$4.00	$12.00	$24.00	$36.00	$54.00

ENGINEER'S WRENCHES.

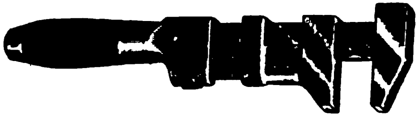


FIG. 375

Inches...............		6	8	10	12	15	18	21
Price, per dozen..	Black	$9.00	$10.00	$12.00	$14.00	$24.00	$30.00	$36.00
Price, per dozen..	Bright	10.00	11.00	14.00	16.00	26.00	32.00	38.00

STILLSON'S PIPE WRENCH.

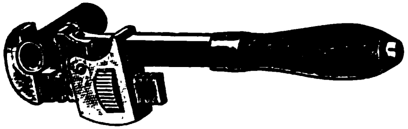


FIG. 362

Length Open, in.	6	8	10	14	18	24	86	48
Takes Wire from, in.	⅛	⅛	⅛	¼	¼	¼	½	1
Takes Pipe to, in.	½	¾	1	1½	2	2½	8½	5
Price, each	$2.00	$2.00	$2.25	$3.00	$4.00	$6.00	$12.00	$18.00
Extra Frames, each	.25	.25	.33	.45	.55	.65	.75	1.00
" Nuts, each	.20	.20	.27	.35	.42	.50	.65	.80
" Jaws, each	.67	.67	.75	1.00	1.33	2.00	4.00	6.00

B. & C. COMBINATION PIPE WRENCH.

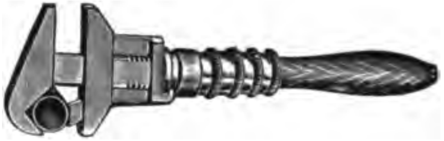


FIG. 305

BRIGHT, WITH LONG NUT.

10 in., for pipe from	¼ to 1	in., per doz.	$25.25
12 "	"	½ to 1¾	"	"	28.50
15 "	"	½ to 2	"	"	40.50
18 "	"	½ to 3	"	"	66.00

BAXTER'S ADJUSTABLE WRENCH.

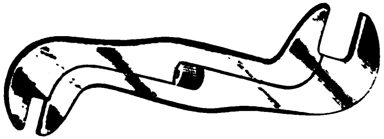


FIG. 756

Sizes, in.	4	6	8	10	12
Price, each	$0.50	$0.75	$1.00	$1.50	$2.00

BARNES' PIPE CUTTER.

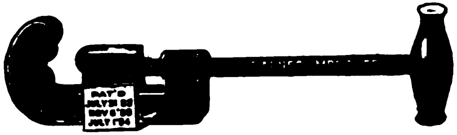


FIG. 317

No.	1	2	8	4	5
Cuts Pipe from, in.	⅛ to 1	½ to 2	1⅛ to 8	8 to 4	4 to 6
Price, each	$4.50	$6.00	$10.00	$20.00	$30.00
" extra Wheels, each	.25	.30	.40	.50	.75
" " Wheel Pins, each.	.10	.10	.10	.18	.18

REED STANDARD PIPE WRENCH.

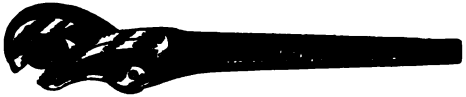


FIG. 1271.

Nos. Show Lengths in Inches	No. 6	No. 8	No. 11	No. 16	No. 20	No. 80	No. 40
Takes from	0 to ½ in. Pipe.	⅛ in. Wire to ¾ in. Pipe.	⅛ in. Pipe to 1 in. Pipe.	⅜ in. Pipe to 1½ in. Pipe.	1 in. Pipe to 2 in. Pipe.	1¼ in. Pipe to 8 in. Pipe.	2 in. Pipe to 4 in. Pipe.
Price, each	$2.00	$2.00	$2.25	$3.00	$4.00	$9.00	$12.00

GAS PIPE STOCK AND DIE.

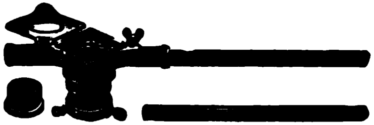


FIG. 372

No.	0	1	1½	1¾	WITH LEADER SCREW.	
					2	3
Dies furnished with each plate.	⅛ to ½	¼ to 1	¾ to 1¼	1 to 1½	1¼ to 2	2½ and 3
Dimensions of Dies	2 x ½	2½ x ¾	3 x ¾	3 x ¾	4 x ⅞	5 x 1¼
Complete with R. H. Dies	$9.50	$15.00	$13.50	$13.50	$20.00	$43.00
Plates without Dies	3.50	5.00	6.00	6.00	9.50	25.00
Extra Dies, R. or L	1.50	2.00	2.50	2.50	3.50	9.00
Extra Bushings.	.25	.35	.45	.45	.60	1.00
Extra Die Frames	…………	.30	.40	.40	.50	.60

PUMP STOCK AND DIE.

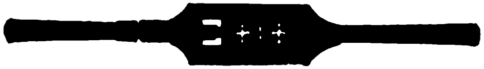


FIG. 757

Sizes, Inches	⅝ x 14	7/16 x 12	½ x 12
Price, each.	$2.50	$2.50	$2.50

ENTERPRISE PIPE VISE.

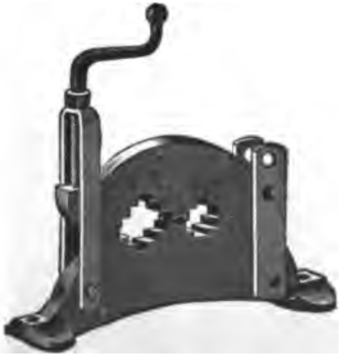


FIG. 374

For ⅜ to 2 in. pipe	**$3.00**

MALLEABLE HINGE VISE.

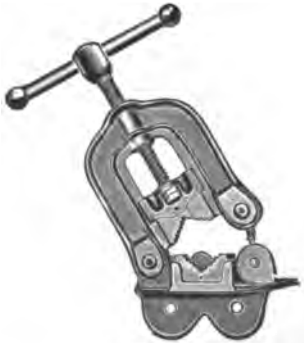


FIG. 308

No. 1. ⅛ to 2 in.	**$10.00**
No. 2, ¼ to 3 "	**14.00**

HOWARD'S PARALLEL BENCH VISE.

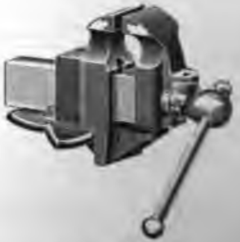


FIG. 671

No. 0, Length of Jaw,	**3**	**in**	**$6.00**
No. 1, " "	**3½**	**"**	**7.00**
No. 2, " "	**4**	**"**	**8.50**
No. 3, " "	**4½**	**"**	**10.00**
No. 4, " "	**5**	**"**	**13.00**

USEFUL INFORMATION—WATER.

Doubling the diameter of a pipe increases its capacity four times. Friction of liquids in pipes increases as the square of the velocity.

The mean pressure of the atmosphere at tide level is usually estimated at 14.7 lbs. per square inch, so that with a perfect vacuum it will sustain a column of mercury 29.9 inches, or column of water 33.9 feet high. In ordinary practice we recommend Pumps be placed not over twenty feet above water supply, and even nearer, where possible.

To find the capacity of any single-acting cylinder, square the diameter (in inches of the cylinder), multiply this by .7854, and the result (which is the area of the circle of cylinder) by the length of stroke in inches. This gives the capacity in cubic inches per stroke. Multiply this by the number of strokes per minute and divide the product by 231 (the number of cubic inches in a gallon of water). The result will be capacity or gallons of water the cylinder will discharge per minute.

A two-cylinder or double-acting cylinder has double the capacity of a single-acting cylinder.

To find the pressure in pounds per square inch of a column of water, multiply the height of the column in feet by .434. Approximately, we say that every foot elevation is equal to ½-lb. pressure per square inch; this allows for ordinary friction.

To find the horse power necessary to elevate water to a given height, multiply the number of gallons per minute by total number of feet water is raised (that is, from surface of the water to the highest point to which the water is raised), and divide by 4,000 and you have the horse power. One horse power is equal to about five men. To the theoretical power a liberal allowance for friction, etc., always should be added.

WEIGHT AND CAPACITY OF DIFFERENT STANDARD GALLONS OF WATER.

	Cubic Inches in a Gallon.	Weight of a Gallon in Pounds.	Gallons in a Cubic Foot.	Weight of a Cubic Foot of Water, English Standard, Lbs. Avoirdupois.
Imperial or English	277.274	10.00	6.232102	62.321
United States	231	8.33111	7.470519	....

BAROMETRIC PRESSURES AT DIFFERENT ALTITUDES.

WITH EQUIVALENT HEAD OF WATER AND THE VERTICAL SUCTION LIFT OF PUMPS.

Altitude.	Barometric Pressure.	Equivalent Head of Water.	Practical Suction Lift of Pump.	Altitude.
Sea Level........................	14.70 lbs. per sq. in.	33.95 ft.	25 ft.	Sea Level........................
¼ mile (1320 ft.) above sea level	14.02 " "	32.38 "	24 "	¼ mile (1320) ft. above sea level
½ " (2640 ft.) " " "	13.33 " "	30.79 "	23 "	½ " (2640) ft. " " "
¾ " (3960 ft.) " " "	12.66 " "	29.24 "	21 "	¾ " (3960) ft. " " "
1 " (5280 ft.) " " "	12.02 " "	27.76 "	20 "	1 " (5280) ft. " " "
1¼ " (6600 ft.) " " "	11.42 " "	26.38 "	19 "	1¼ " (6600) ft. " " "
1½ " (7920 ft.) " " "	10.88 " "	25.13 "	18 "	1½ " (7920) ft. " " "
2 " (10560 ft.) " " "	9.88 " "	22.82 "	17 "	2 " 10560) ft. " " "

TABLE OF CAPACITY OF PUMPS.

Dia. of Cyl. Ins.	Area, Square Inches.	Length of Stroke in Inches.																Dia. of Cyl. Ins.
		2	3	4	5	6	7	8	9	10	12	14	15	16	18	20	24	
		Capacity per Stroke in Gallons, or Decimal Parts Thereof.																
½	.196	.002	.003	.003	.004	.005	.006	.007	.008	.009	.01	.012	.013	.014	.015	.017	.02	½
⅝	.307	.003	.004	.005	.007	.008	.009	.011	.012	.013	.016	.019	.02	.021	.024	.027	.032	⅝
¾	.442	.004	.006	.008	.01	.011	.013	.015	.017	.019	.023	.027	.029	.031	.034	.038	.046	¾
⅞	.601	.005	.008	.01	.013	.016	.018	.021	.023	.026	.031	.036	.039	.042	.047	.052	.062	⅞
1	.785	.007	.01	.014	.017	.02	.024	.027	.031	.034	.041	.048	.051	.054	.061	.068	.082	1
1⅛	.994	.009	.013	.017	.022	.026	.03	.034	.039	.043	.052	.06	.065	.069	.077	.086	.103	1⅛
1¼	1.227	.011	.016	.021	.027	.032	.037	.043	.048	.053	.064	.074	.08	.085	.096	.106	.127	1¼
1⅜	1.485	.013	.019	.026	.032	.039	.044	.051	.058	.064	.077	.089	.096	.103	.116	.128	.154	1⅜
1½	1.767	.015	.023	.031	.038	.046	.054	.061	.069	.077	.092	.107	.115	.122	.138	.153	.184	1½
1¾	2.405	.021	.031	.042	.052	.063	.073	.083	.094	.104	.125	.146	.156	.167	.187	.208	.25	1¾
2	3.142	.027	.041	.054	.068	.082	.095	.109	.122	.136	.163	.19	.204	.218	.245	.272	.326	2
2¼	3.976	.034	.052	.069	.086	.103	.121	.138	.155	.172	.206	.241	.258	.275	.31	.344	.413	2¼
2½	4.909	.043	.064	.085	.106	.128	.149	.17	.191	.213	.255	.298	.319	.34	.383	.425	.51	2½
2¾	5.94	.051	.077	.103	.129	.154	.18	.206	.231	.257	.309	.36	.386	.411	.463	.514	.617	2¾
3	7.069	.061	.092	.122	.153	.184	.214	.245	.275	.306	.367	.428	.459	.49	.551	.612	.734	3
3¼	8.296	.072	.108	.144	.18	.215	.251	.287	.323	.359	.431	.503	.539	.575	.647	.718	.862	3¼
3½	9.621	.083	.125	.167	.208	.25	.292	.333	.375	.417	.5	.583	.625	.666	.75	.833	1.	3½
3¾	11.045	.095	.143	.191	.239	.287	.335	.382	.43	.478	.574	.669	.717	.765	.861	.956	1.147	3¾
4	12.566	.109	.163	.218	.272	.326	.381	.435	.49	.544	.653	.762	.816	.87	.979	1.088	1.306	4
4¼	14.186	.123	.184	.246	.307	.368	.43	.491	.553	.614	.737	.86	.921	.982	1.105	1.228	1.473	4¼
4½	15.904	.138	.207	.275	.344	.413	.482	.551	.62	.689	.826	.964	1.033	1.102	1.239	1.377	1.652	4½
4¾	17.721	.153	.23	.307	.384	.46	.537	.614	.69	.767	.92	1.073	1.15	1.227	1.38	1.534	1.84	4¾
5	19.635	.17	.255	.34	.425	.51	.595	.68	.765	.85	1.02	1.19	1.275	1.36	1.53	1.7	2.04	5
5¼	21.648	.187	.281	.375	.469	.562	.656	.75	.843	.937	1.124	1.311	1.405	1.499	1.686	1.874	2.248	5¼
5½	23.758	.206	.309	.411	.514	.617	.72	.823	.926	1.029	1.234	1.44	1.543	1.646	1.851	2.057	2.468	5½
5¾	25.967	.225	.337	.45	.562	.674	.787	.899	1.011	1.124	1.348	1.573	1.686	1.798	2.022	2.248	2.696	5¾
6	28.274	.245	.367	.49	.612	.734	.857	.979	1.102	1.224	1.469	1.714	1.836	1.958	2.203	2.448	2.938	6
6¼	30.68	.266	.398	.531	.664	.797	.93	1.062	1.195	1.328	1.593	1.859	1.992	2.124	2.39	2.656	3.186	6¼
6½	33.183	.287	.431	.574	.718	.861	1.005	1.149	1.293	1.436	1.796	2.011	2.155	2.298	2.589	2.873	3.447	6½
6¾	35.785	.309	.465	.62	.775	.929	1.084	1.239	1.394	1.549	1.858	2.168	2.323	2.479	2.788	3.098	3.716	6¾
7	38.485	.333	.5	.666	.833	1.	1.166	1.333	1.499	1.666	1.999	2.332	2.499	2.666	2.999	3.332	3.998	7
7½	44.179	.383	.574	.765	.956	1.148	1.339	1.53	1.721	1.913	2.295	2.678	2.869	3.06	3.443	3.825	4.59	7½
7¾	47.173	.408	.613	.817	1.021	1.225	1.429	1.633	1.837	2.042	2.45	2.858	3.063	3.266	3.674	4.084	4.9	7¾
8	50.266	.435	.653	.87	1.088	1.306	1.523	1.741	1.958	2.176	2.611	3.046	3.264	3.482	3.917	4.352	5.222	8
8½	56.745	.49	.735	.98	1.225	1.47	1.715	1.96	2.205	2.45	2.94	3.43	3.675	3.92	4.41	4.9	5.88	8½
8¾	60.132	.52	.78	1.04	1.3	1.56	1.82	2.08	2.34	2.6	3.12	3.64	3.9	4.16	4.68	5.2	6.24	8¾
9	63.617	.551	.826	1.101	1.377	1.652	1.928	2.203	2.479	2.754	3.305	3.856	4.131	4.406	5.057	5.508	6.61	9
9½	70.882	.612	.918	1.224	1.53	1.83	2.142	2.448	2.754	3.06	3.672	4.284	4.59	4.896	5.51	6.12	7.344	9½
9¾	74.662	.646	.97	1.293	1.616	1.939	2.262	2.586	2.908	3.232	3.878	4.525	4.848	5.171	5.818	6.464	7.757	9¾
10	78.54	.68	1.02	1.36	1.7	2.04	2.38	2.72	3.06	3.4	4.08	4.76	5.1	5.44	6.12	6.8	8.16	10
11	95.033	.823	1.234	1.645	2.057	2.464	2.879	3.291	3.726	4.114	4.937	5.76	6.171	6.582	7.405	8.228	9.874	11
11½	103.869	.90	1.351	1.80	2.252	2.701	3.15	3.60	4.05	4.505	5.406	6.30	6.75	7.2	8.1	9.	10.8	11½
12	113.098	.979	1.468	1.958	2.448	2.938	3.422	3.917	4.406	4.896	5.875	6.854	7.344	7.833	8.813	9.792	11.75	12
13	132.733	1.149	1.723	2.297	2.872	3.445	4.022	4.596	5.17	5.745	6.894	8.042	8.616	9.192	10.34	11.49	13.78	13
14	153.938	1.332	1.998	2.665	3.331	3.997	4.664	5.33	5.996	6.663	7.994	9.328	9.993	10.66	11.99	13.32	15.98	14
14½	165.13	1.43	2.142	2.856	3.574	4.284	5.0	5.718	6.426	7.148	8.578	10.0	10.71	11.424	12.852	14.28	17.136	14½
15	176.715	1.529	2.294	3.059	3.824	4.589	5.354	6.119	6.884	7.649	9.178	10.7	11.47	12.23	13.76	15.29	18.35	15
16	201.062	1.74	2.61	3.48	4.35	5.22	6.09	6.96	7.83	8.703	10.44	12.18	13.05	13.92	15.66	17.40	20.88	16
18	254.47	2.202	3.303	4.404	5.505	6.606	7.707	8.808	9.909	11.01	13.21	15.41	16.51	17.61	19.81	22.02	26.42	18
20	314.16	2.720	4.08	5.44	6.8	8.16	9.52	10.88	12.24	13.6	16.32	19.04	20.4	21.76	24.48	27.2	32.64	20

FRICTION OF WATER IN PIPES.

Friction loss in pounds pressure per sq. in. for each 100 ft. of length in different size clean iron pipe, discharging given quantities water per min.

Gallons per Minute.	Sizes of Pipes.—Inside Diameter.												
	¾ In.	1 In.	1¼ In.	1½ In.	2 In.	2½ In.	3 In.	4 In.	5 In.	6 In.	7 In.	8 In.	10 In.	12 In.
5	3.3	0.84	0.31	0.12	0.03	......	......	......	......	......	......	......	......	......
10	13.0	3.16	1.05	0.47	0.12	0.03	......	......	......	......	......	......	......	......
15	28.7	6.98	2.38	0.97	0.27	0.06	......	......	......	......	......	......	......	......
20	50.4	12.3	4.07	1.66	0.42	0.13	0.03	......	......	......	......	......	......	......
25	78.0	19.0	6.40	2.62	0.67	0.21	0.10	......	......	......	......	......	......	......
30	......	27.5	9.15	3.75	0.91	0.30	0.12	0.03	......	......	......	......	......	......
35	......	37.0	12.4	5.05	1.26	0.42	0.14	0.05	......	......	......	......	......	......
40	......	48.0	16.1	6.52	1.60	0.51	0.17		......	......	......	......	......	......
45	......	......	20.2	8.15	2.01	0.62	0 27	0.07	......	......	......	......	......	......
50	......	......	24.9	10.0	2.44	0.81	0.35	0.09	0.03	......	......	......	......	......
75	......	......	56.1	22.4	5.32	1.80	0 74	0.21	0.06	0.03	......	......	......	......
100	......	......	......	39.0	9.46	3.20	1.31	0.33	0.12	0.05	......	......	......	......
125	......	......	......	......	14.9	4.89	1.99	0 51	0.17	0.07	......	......	......	......
150	......	......	......	......	21.2	7.0	2.85	0 69	0.25	0.10	......	0.02	......	......
175	......	......	......	......	28.1	9.46	3.85	0.95	0.34	0.14	......	0.03	......	......
200	......	......	......	......	37.5	12.47	5.02	1.22	0.42	0.17	0.08	0.05	0.01	......
250	......	......	......	......	......	19.66	7.76	1.89	0.65	0.26	0.13	0.07	0.03	.01
300	......	......	......	......	......	28.06	11.2	2.66	0.93	0.37	0.18	0.09	0.04	......

Gallons.	3 In.	4 In	5 In.	6 In.	7 In.	8 In	10 In	12 In.	14 In.	16 In.	18 In.	20 In.	24 In.	30 In.
350	15.2	3.65	1.28	.50	.25	.12	.05	02	......	......	......	......	......	......
400	19 5	4.73	1.68	.65	.32	.16	.06	......	......	......	......	......	......	......
450	25.	6.01	2.10	.81	.42	.20	.07	.03	......	......	......	......	......	......
500	30.8	7.43	2.70	.96	.49	.25	.09	.04	.017	.009	.005	......	......	......
600	......	10.6	3 45	1.72	.86	.348	.13	.05	.024	......	......	......	......	......
750	......	......	5 40	2.21	1.11	.53	.18	.08	.038	......	......	......	......	......
1000	......	......	9 60	3.88	1.91	.94	.32	.13	.062	.036	.02	......	......	......
1250	......	......	......	......	......	1.46	.49	.20	......	......	......	......	......	......
1500	......	......	......	......	......	2.09	.70	.29	.135	.071	......	......	......	......
1750	......	......	......	......	......	......	.95	.38	......	......	......	......	......	......
2000	......	......	......	......	......	......	1.23	.49	.234	.123	......	......	......	......
2500	......	......	......	......	......	......	......	.77	.362	.188	.107	......	......	......
3000	......	......	......	......	......	......	......	1.11	.515	.267	.15	.09	......	......
3500	......	......	......	......	......	......	......	......	.697	.365	.204	.124	......	......
4000	......	......	......	......	......	......	......	......	.91	.47	.264	.158	.067	.022
4500	......	......	......	......	......	......	......	......	......	.593	.33	.20	.08	.027
5000	......	......	......	......	......	......	......	......	......	.73	.41	.244	.102	.035

FEET HEAD OF WATER INTO PRESSURE, PER SQUARE INCH.

Feet Head.	Pounds per Sq. In.	Feet Head.	Pounds per Sq. In.	Feet Head.	Pounds per Sq. In.
1	.43	60	25.99	200	86.62
2	.87	70	30.32	225	97.45
3	1.30	80	34.65	250	108.27
4	1.73	90	38.98	275	119.10
5	2.17	100	43.31	300	129.93
6	2.60	110	47.64	325	140.75
7	3.03	120	51.97	350	151.58
8	3.40	130	56.30	400	173.24
9	3.90	140	60.63	500	216.55
10	4.33	150	64.96	600	259.85
20	8.66	160	69.29	700	303.16
30	12.99	170	73.63	800	346.47
40	17.32	180	77.96	900	389.78
50	21.65	190	82.29	1,000	433.09

PRESSURE PER SQUARE INCH INTO FEET HEAD OF WATER.

Pounds per Sq. in.	Feet Head.	Pounds per Sq. In.	Feet Head.	Pounds per Sq. In	Feet Head.
1	2.31	40	92.36	170	392.52
2	4.62	50	115.45	180	415 61
3	6.93	60	138.54	190	438.90
4	9.24	70	161.63	200	461.78
5	11.54	80	184.72	225	519.51
6	13.85	90	207.81	250	577.24
7	16.16	100	230.90	275	643.03
8	18.47	110	253.98	300	692.69
9	20.78	120	277.07	325	750.41
10	23.09	125	288.62	350	808.13
15	34.63	130	300.16	375	865.89
20	46.18	140	323.25	400	922.58
25	57.72	150	346.34	500	1154.48
30	69.27	160	369.43	1,000	2308.

The driving pulley is called the Driver, and the driven pulley the Driven.

If the number of *teeth in gears* are used instead of diameter, in these calculations, number of teeth must be substituted wherever diameter occurs.

To find the diameter of Driver, the diameter of the Driven and its revolutions, and also revolutions of Driver being given: Multiply the diameter of Driven by its revolutions, and divide the product by the revolutions of the Driver; the quotient will give the diameter of the Driver. To find the diameter of Driven, the revolutions of the Driven, also diameter and revolutions of the Driver being given: Multiply the diameter of Driver by its revolutions, and divide the product by the revolutions of the Driven; the quotient will give the diameter of the Driven. To find the revolutions of the Driver, the diameter and revolutions of the Driven, also diameter of the Driver being given: Multiply the diameter of Driven by its revolutions, and divide the product by the diameter of Driver; the quotient will give the revolutions of Driver. To find the revolutions of the Driven, the diameter and revolutions of the Driver, also diameter of the Driven being given: Multiply the diameter of Driver by its revolutions, and divide the product by the diameter of Driven; the quotient will give the revolutions of Driven.

HORSE POWER BELTING WILL TRANSMIT.

Width of Belt in Inches.	Horse Power per 100 Ft. Velocity of Belt.		Width of Belt in Inches.	Horse Power per 100 Ft. Velocity of Belt.	
	Single Belt.	Double Belt.		Single Belt.	Double Belt.
1	.09	.18	12	1.09	2.18
2	.18	.36	14	1.27	2.55
3	.27	.55	16	1.45	2.91
4	.36	.73	18	1.64	3.27
5	.45	.91	20	1.82	3.64
6	.55	1.09	22	2.00	4.00
7	.64	1.27	24	2.18	4.36
8	.73	1.46	28	2.55	5.09
9	.82	1.64	32	2.91	5.82
10	.91	1.82	36	3.27	6.55
11	1.	2.	40	3.64	7.27

In the calculations for horse power in the above table, the belt is assumed to run about horizontally, the semi-circumference of smaller pulley has been considered as the ordinary arc contact of belt. Any reduction of this contact will make approximate proportional reduction of horse power.

HORSE POWER SHAFTING WILL TRANSMIT.

Diameter of Shaft in Inches.	Revolutions per Minute.									
	100	125	150	175	200	225	250	300	350	400
15-16	1.2 h. p.	1.4 h. p.	1.7 h. p.	2.1 h. p.	2.4 h. p.	2.6 h. p.	3.1 h. p.	3.6 h. p.	4.3 h. p.	5.0 h. p.
1 3-16	2.4 "	3.1 "	3.7 "	4.3 "	4.9 "	5.5 "	6.1 "	7.3 "	8.5 "	9.7 "
1 7-16	4.3 "	5.3 "	6.4 "	7.4 "	8.5 "	9.5 "	10.5 "	12.7 "	14.8 "	16.9 "
1 11-16	6.7 "	8.4 "	10.1 "	11.7 "	13.4 "	15.1 "	16.7 "	20.1 "	23.4 "	26.8 "
1 15-16	10.0 "	12.5 "	15.0 "	17.5 "	20.0 "	22.5 "	25.0 "	30.0 "	35.0 "	40.0 "
2 3-16	14.3 "	17.8 "	21.4 "	24.9 "	28.5 "	32.1 "	35.6 "	42.7 "	49.8 "	57.0 "
2 7-16	19.5 "	24.4 "	29.3 "	34.1 "	39.0 "	44.1 "	48.7 "	58.5 "	68.2 "	78.0 "
2 11-16	26.0 "	32.5 "	39.0 "	43.5 "	52.0 "	58.5 "	65.0 "	78.0 "	87.0 "	104.0 "
2 15-16	33.8 "	42.2 "	50.6 "	59.1 "	67.5 "	75.9 "	84.4 "	101.3 "	118.2 "	135.0 "
3 3-16	43.0 "	53.6 "	64.4 "	75.1 "	85.8 "	96.6 "	107.3 "	128.7 "	150.3 "	171.6 "
3 7-16	53.6 "	67.0 "	79.4 "	93.8 "	107.2 "	120.1 "	134.0 "	158.8 "	187.6 "	214.4 "
3 11-16	65.9 "	82.4 "	97.9 "	115.4 "	121.8 "	148.3 "	164.8 "	195.7 "	230.7 "	243.6 "
3 15-16	80.0 "	100.0 "	120.0 "	140.0 "	160.0 "	180.0 "	200.0 "	240.0 "	280.0 "	320.0 "
4 7-16	113.9 "	142.4 "	170.8 "	199.3 "	227.8 "	256.2 "	284.7 "	341.7 "	398.6 "	455.6 "
4 15-16	156.3 "	195.3 "	234.4 "	273.4 "	312.5 "	351.5 "	390.6 "	468.7 "	546.8 "	625.0 "

TABLE FOR EQUALIZING PIPES.

The size of main pipe is given in the column at the left. The number of branches is given in the line on top, and the proper size of branches is given in the body of the table on the line of each main and beneath the desired number of branches.

In commercial sizes the nominal 1¼-inch pipe is generally over-size. Often as large as 1⅜. It is safe to call it 1.3 inches, and it is so figured in the table. Exact sizes are given for branch pipes. The designer of the pipe system can thus better select the commercial sizes to be used.

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Size of Main Pipe.	Number of Branches.														
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 in.	.758	.644	.574	.525	.488	.459	.435	.415	.398	.383	.370	.358	.348	.338	.330
1¼ "	.985	.838	.747	.683	.635	.597	.556	.540	.518	.498	.482	.466	.452	.440	.428
1½ "	1.14	.967	.861	.788	.733	.689	.653	.623	.597	.575	.555	.538	.522	.508	.494
2 "	1.52	1.29	1.15	1.05	.977	.918	.870	.830	.796	.766	.740	.717	.696	.677	.660
2½ "	1.89	1.61	1.44	1.31	1.22	1.15	1.09	1.09	.995	.958	.925	.896	.870	.846	.825
3 "	2.27	1.92	1.72	1.58	1.47	1.38	1.31	1.25	1.19	1.15	1.11	1.08	1.04	1.02	.989
3½ "	2.65	2.26	2.01	1.84	1.71	1.61	1.52	1.45	1.39	1.34	1.30	1.25	1.22	1.18	1.15
4 "	3.03	2.58	2.30	2.10	1.95	1.84	1.74	1.66	1.59	1.53	1.48	1.43	1.39	1.35	1.32
4½ "	3.41	2.90	2.58	2.36	2.20	2.07	1.96	1.87	1.79	1.72	1.67	1.61	1.57	1.52	1.48
5 "	3.79	3.22	2.87	2.63	2.44	2.30	2.18	2.08	1.99	1.92	1.85	1.79	1.74	1.69	1.65
6 "	4.55	3.87	3.45	3.15	2.93	2.75	2.61	2.49	2.39	2.30	2.22	2.15	2.09	2.03	1.98
7 "	5.30	4.51	4.02	3.68	3.42	3.21	3.05	2.91	2.79	2.68	2.59	2.51	2.44	2.37	2.31
8 "	6.06	5.16	4.59	4.20	3.91	3.67	3.48	3.32	3.18	3.09	2.96	2.87	2.78	2.71	2.64
9 "	6.82	5.80	5.17	4.73	4.40	4.13	3.92	3.74	3.58	3.45	3.33	3.23	3.13	3.04	2.97
10 "	7.58	6.44	5.74	5.25	4.88	4.59	4.35	4.15	3.98	3.83	3.70	3.59	3.48	3.38	3.30
12 "	9.08	7.73	6.89	6.30	5.86	5.51	5.22	4.98	4.78	4.60	4.44	4.30	4.18	4.06	3.96

CAPACITY OF ROUND TANKS AND CISTERNS

IN U. S. GALLONS, PER FOOT IN HEIGHT.

Diameter Feet.	Gallons.	Diameter Feet.	Gallons.
2	23.5	17	1,698
3	52.9	18	1,903
4	94	19	2,121
5	147	20	2,350
6	212	22	2,844
7	288	24	3,384
8	376	26	3,971
9	476	28	4,606
10	588	30	5,288
11	711	32	6,016
12	846	36	7,617
13	993	40	9,400
14	1,152	45	11,897
15	1,322	56	14,688
16	1,504	60	21,151

WROUGHT-IRON WELDED PIPE.

DIMENSIONS, WEIGHTS, Etc., OF STANDARD SIZES FOR STEAM, GAS, WATER, OIL, Etc.

One and one-fourth inch and below are butt-welded, and proved to 300 pounds per square inch hydraulic pressure.

One and one-half inch and above are lap-welded, and proved to 500 pounds, per square inch hydraulic pressure.

Nominal Inside Diameter.	Actual Outside Diameter.	Internal Area.	Weight per Foot of Length.	Contents in Gallons per Foot.	Weight of Water per Foot of Length.
½ in.	.84 in.	.304 in.	.84 lbs.	.0102	.085 lbs.
¾ "	1.05 "	.533 "	1.12 "	.0230	.190 "
1 "	1.31 "	.862 "	1.67 "	.0408	.349 "
1¼ "	1.66 "	1.496 "	2.25 "	.0638	.527 "
1½ "	1.9 "	2.038 "	2.69 "	.0918	.760 "
2 "	2.37 "	3.355 "	3.66 "	.1632	1.356 "
2½ "	2.87 "	4.783 "	5.77 "	.2550	2.116 "
3 "	3.5 "	7.388 "	7.54 "	.3673	3.049 "
3½ "	4 "	9.837 "	9.05 "	.4998	4.155 "
4 "	4.5 "	12.730 "	10.72 "	.6528	5.405 "
4½ "	5 "	15.939 "	12.49 "	.8263	6.851 "
5 "	5.56 "	19.990 "	14.56 "	1.020	8.500 "
6 "	6.62 "	28.889 "	18.76 "	1.469	12.312 "

IRRIGATION TABLE.

GIVING CAPACITY IN GALLONS PER HOUR AND EQUIVALENT IN MINERS' INCHES, POWER REQUIRED PER FOOT LIFT AND IRRIGATING ACREAGE.

Gallons per Hour.	Miners' Inches.	Approximate Horse Power Required per Foot Lift.	Number of Acres Will Cover 1 Inch Deep in 10 Hours.
500	42	.004	.18
1,000	84	.007	.37
1,500	125	.01	.55
2,000	167	.014	.74
2,500	217	.017	.92
3,000	250	.02	1.11
3,500	292	.024	1.28
4,000	333	.027	1.48
4,500	375	.03	1.66
5,000	417	.034	1.8
6,000	500	.04	2.2
7,000	583	.047	2.5
8,000	667	.054	3.
9,000	750	.06	3.3
10,000	833	.067	3.7
15,000	1,250	.1	5.5
20,000	1,666	.134	7.4
25,000	2,083	.167	9.2
30,000	2,500	.2	11.1

NOTE.

Because of varying conditions of climate and soil, no exact rule can be made, yet, as basis for estimate, a supply of 2 to 3 gallons water per minute per acre through irrigating season is considered liberal. Example: 100 acres 200 to 300 gallons water per minute. In many sections one-half this quantity is sufficient.

NOTE—As stated, a miners' inch of water is considered in these tables as 12 U. S. gallons per minute. If considered as 9 U. S. gallons per minute, increase our estimate one-third. Our estimate of approximate horse power required per foot lift also makes an allowance of 50 per cent. for friction of water in pipes, etc. The efficiency of small engines or motors of any type cannot be safely accepted on as close estimates as larger powers.

TABLE OF DISCHARGE OF WATER OVER WEIRS ONE INCH WIDE, IN GALLONS PER MINUTE.

Depth, inches	½	1	2	3	4	5	6	7	8	9	10	12	18	24	30
Gallons	1.14	3.2	9.1	16.7	25.7	35.4	47.2	59.6	72.8	86.5	101.7	133.7	245.7	378.2	516.6

APPROXIMATE HEIGHTS PUMPS MAY BE WORKED BY PONY OR HORSE GEAR.

The pony or horse in each case being estimated to walk at the rate of three miles per hour.

Diameter of Working Barrel or Cylinder, inches	2½	3	3½	4	5	6
Single-Barrel Pump, worked by Pony Gear	260 ft.	175 ft.	135 ft.	100 ft.	64 ft.	44 ft.
Double-Barrel Pump, worked by Pony Gear	130 "	88 "	68 "	50 "	32 "	22 "
Single-Barrel Pump, worked by Horse Gear	520 "	350 "	270 "	200 "	128 "	88 "
Double-Barrel Pump, worked by Horse Gear	260 "	176 "	136 "	100 "	64 "	44 "

The above calculations are based upon strong, powerful horses or ponies being used. If inferior animals are substituted, the heights given will, of course, not be attained.

WEIGHTS AND MEASURES.

METRIC SYSTEM.

LENGTH.

1 millimeter = .0394 inches.
1 centimeter = .3937 inches.
1 METER = 39.3708 inches.
1 kilometer = 0.6214 miles.

SQUARE.

1 sq. centimeter = .1549 sq. in.
1 sq. meter = 10.7631 sq. feet.
1 ARE = 119.5894 sq. yds.
1 hectare = 2.4711 acres.

CUBIC.

1 CUBIC METER = 35.3166 cu. feet.

U. S. STANDARD.

LENGTH.

1 inch = 2.5309 centimeters.
1 foot = 30.4794 centimeters.
1 yard = .9143 meters.
1 mile = 1.6093 kilometers.

SQUARE.

1 sq. in. = 6.4513 sq. centimeters.
1 sq. ft. = .0929 sq. meters.
1 sq. yd. = .8361 sq. meters.
1 acre = .4047 hectares.

CUBIC.

1 cubic foot = .02831 cubic meters.

METRIC SYSTEM.

WEIGHT.

1 gram = 15.4323 grains.
1 KILOGRAM = 2.2046 lbs.
1 tonneau = 2204.55 lbs.

DRY MEASURE.

1 centiliter = .0181 pints.
1 LITER = .908 quarts.
1 hectoliter = 2.837 bushels.

LIQUID MEASURE.

1 centiliter = .0211 pints.
1 LITER = 1.0567 quarts.
1 hectoliter = 26.4176 gallons.

U. S. STANDARD.

WEIGHT.

1 lb. = .4536 kilos.
1 cwt. = 50.8024 kilos.
1 ton = 1016.0483 kilos.

DRY MEASURE.

1 pint = 55.0661 centiliters.
1 quart = 1.1013 liters.
1 bushel = 35.2416 liters.

LIQUID MEASURE.

1 pint = 47.3171 centiliters.
1 quart = .9563 liters.
1 gallon = 3.7854 liters.

1 U. S. ton of shipping = 40 cubic feet = 82.143 U. S. bushels = 1.1826 cubic meters.
Minimum freight charged on a SS. B | L is on 20 cubic feet.

ESTIMATE OF VALUES OF FOREIGN COINS.

Country.	Monetary Unit.	Value in Terms of U. S. Gold Dollar.
Argentine Republic	Peso	$0.96,5
Austria-Hungary	Crown	.20,3
Belgium	Frank	.19,3
Bolivia	Boliviano	.44,3
Brazil	Milreis	.54,6
British Possessions, N. A. (*Except Newfoundland.*)	Dollar	1.00
Central American States:		
Costa Rica	Colon	.46,5
Guatemala	Peso	.44,3
Honduras		
Nicarauga		
Salvater		
Chili	Peso	.36,5
China	Tael Shanghai	.67,0
	Tael Haikwan (Customs)	.75,3
Colombia	Peso	.44,3
Cuba	Peso	.92,6
Denmark	Crown	.26,8
Ecuador	Sucre	.44,3
Egypt	Pound (100 piastres)	4.94,3
Finland	Mark	.19,3
France	Franc	$.19,3
German Empire	Mark	0.23,8
Great Britain	Pound Sterling	4.86,6½
Greece	Drachma	.19,3
Haiti	Gourde	.96,5
India	Rupee	.210
Italy	Lira	.19,3
Japan	Yen, Gold	.49,8
Liberia	Dollar	1.00
Mexico	Dollar	.48,1
Netherlands	Florin	.40,2
Newfoundland	Dollar	1.01,4
Norway	Crown	.26,8
Peru	Sol	.44,3
Portugal	Milreis	1.08
Russia	Ruble, Gold	.51,5
Spain	Peseta	.19,3
Sweden	Crown	.26,8
Switzerland	Franc	.19,3
Tripoli	Mahbub, 20 Piastres	.41,3
Turkey	Piastre	.04,4
Venezuela	Bolivar	.19,3

PUMP REPAIRS.

In the following Tables will be found a partial price list of Staple Pump Repairs. Repairs for Pumps not included in Tables will be quoted upon application.

GOULDS CISTERN PUMPS, FIGS. 198, 199, 200, 201, 202 1-2.

No.	0	1	2	3	4	5	6	8
Dia. Cylinder, Inches	2	2¼	2½	2¾	3	3¼	3½	4
Lever or Handle	$0.50	$0.50	$0.50	$0.60	$0.70	$1.00	$1.25	$1.50
Fulcrum or Bearer Top	.70	.70	.70	.75	.80	.90	1.10	1.50
Cylinder	1.45	1.60	1.80	1.90	2.25	2.40	3.00	4.00
Brass-Lined Cylinder	3.00	3.25	3.50	4.00	4.25	5.00	6.00	8.50
Brass Cylinder	5.00	5.50	6.00	6.50	7.00	8.00	10.00	13.50
Iron Top Section for B.C. Pump	1.00	1.00	1.15	1.25	1.50	2.00	2.50	3.50
Base, Figs. 198, 199, 200, 201	.75	.75	.75	.85	1.00	1.00	1.25	1.75
Bottom Cap, Fig. 202½	.50	.50	.50	.50	.50	.75	.75	1.00
Plunger with Rod	.70	.75	.80	.90	1.00	1.15	1.30	1.50
Plunger Rod only	.15	.15	.15	.15	.15	.15	.15	.15
Plunger Cage	.30	.35	.35	.40	.45	.50	.60	.70
Plunger Follower	.30	.35	.35	.40	.45	.50	.60	.70
Plunger Poppet Valve	.10	.10	.10	.10	.15	.15	.15	.15
Brass Plunger Poppet Valve, Fig. 199, etc	.20	.20	.20	.20	.30	.30	.30	.30
Brass Plunger with Rod	1.40	1.50	1.60	1.80	2.00	2.30	2.60	3.00
Brass Plunger Cage	.60	.70	.70	.80	.90	1.00	1.20	1.40
Brass Plunger Follower	.60	.70	.70	.80	.90	1.00	1.20	1.40
Plunger Leather	.15	.15	.15	.15	.15	.20	.20	.20
Lower Valve complete	.25	.25	.25	.25	.25	.35	.35	.35
Lower Valve Leather	.15	.15	.15	.15	.15	.20	.20	.20
Lower Valve Weight	.10	.10	.10	.10	.10	.15	.15	.15
Lower Valve Screw and Washer	.05	.05	.05	.05	.05	.05	.05	.05
Brass Valve Seat and Tube	.75	.75	.75	.75	.75	1.00	1.25	1.75
Brass Tube for Iron or Lead Pipe	.50	.50	.50	.50	.50	.75	.75	1.00
Iron Pipe Nut	.35	.35	.35	.35	.35	.45	.45	.60
Lead Pipe Nut	.25	.25	.25	.25	.25	.35	.35	.50
Base, Lever, Bearer Bolts and Set Screws	.08	.08	.08	.08	.08	.08	.08	.08
Leather Ring Packing	.10	.10	.10	.10	.10	.10	.10	.10

GOULDS PITCHER PUMPS, FIGS. *923, 205, 205½, 209, 208.

No.	1	2	3	4	5	6
Diameter Cylinder, Inches	2½	3	3½	4	4½	5
Lever	$0.60	$0.60	$0.60	$0.60	$0.75	$1.00
Fulcrum or Bearer Top, Figs. 205, 209, 208, Open Top	.40	.40	.50	.50	.60	1.25
Fulcrum or Bearer Top, Figs. 205½, 209, 208, Closed Top	.60	.70	.85	.95	1.25	1.50
Cylinder	1.25	1.35	1.50	1.75	2.25	3.50
Brass-Lined or Porcelain-Lined Cylinder	2.50	3.00	3.50	4.00	5.00	7.50
Base, Figs. 205, 205½, 209	.75	.85	1.00	1.25	1.75	3.25
Same for Brass Valve Seat	.80	.90	1.00	1.15	1.50	3.00
Base, Fig. 208	1.60	1.75	2.00	......	......	......
Plunger complete with Rod	.75	.80	.90	1.00	1.50	2.00
Plunger Rod	.10	.10	.10	.15	.15	.25
Plunger Cage	.35	.45	.60	.70	.80	1.00
Plunger Follower	.35	.45	.60	.70	.80	1.00
Plunger Poppet Valve	.10	.15	.15	.15	.20	.25
Plunger Leather	.15	.15	.20	.20	.20	.30
Lower Valve Complete	.25	.25	.35	.35	.35	.45

GOULDS PITCHER PUMPS, FIGS. *923, 205, 205½, 209, 208.—Continued.

No.	1	2	3	4	5	6
Diameter Cylinder, Inches	2½	3	3½	4	4½	5
Lower Valve Leather	$0.15	$0.15	$0.20	$0.20	$0.20	$0.30
Lower Valve Weight	.10	.10	.15	.15	.15	.15
Lower Valve Screw and Washer	.05	.05	.05	.05	.05	.05
Brass Valve Seat and Tube	.75	.90	1.10	1.20	1.30	1.75
Iron Pipe Nut	.35	.35	.35	.45	.45	.75
Lead Pipe Nut	.25	.25	.25	.35	.35	.60
Brass Tube for Iron or Lead Pipe	.50	.50	.50	.75	.75	1.50
Brass Valve Plate	.50	.50	.50	.75	.75	1.00
Leather Ring Packing	.10	.10	.10	.15	.20	.25
Base, Set Screw and Lever Bolts.	.08	.08	.08	.08	.08	.08

* Fig. 923, Repairs takes Lists of No. 1 Pumps.

GOULDS WELL PUMPS, FIGS. 1018, 1019, AND PUMP STANDARDS, FIGS. 1023 AND 1024.

Lever or Handle, Fig. 1018	$1.00
" " " 1019	1.25
Fulcrum or Bearer Top, Fig. 1018	.75
" " " " 1019	1.25
Stock or Standard only, Figs. 1018 and 1019	3.50
Bearer Link, Fig. 1019	.25
Crosshead, Fig. 1019	.50
Long Plunger Rod, Fig. 1018	.50
Long Polished Plunger Rod, Fig. 1019	.75
Brace, Figs. 1018 and 1019	.50
Extra Connecting Pipe and Rod, per foot	.50

Cylinder Repairs, see page 330.

GOULDS "STAR" WELL PUMPS, FIGS. 550, 551, 553, 554, 847, 848, 847½, 848½.

	All Sizes.
Level or Handle, Fig. 550	$1.00
Level or Handle, Figs. 551, 553, 847, 848, 847½, 848½	1.25
Level or Handle Fig. 554	1.40
Fulcrum or Bearer Top, Fig. 550, 847½	.50
Fulcrum or Bearer Top, Figs. 551, 847	1.10
Fulcrum or Bearer Top, Fig. 553	[illegible]
Fulcrum or Bearer Top, Fig. 848½	[illegible]
Fulcrum or Bearer Top, Figs. 554, 848	[illegible]
Stock or Standard only, Figs. 550, 553, 847½, 848½	[illegible]
Stock or Standard only, Figs. 551, 554, 847, 848	[illegible]
Bearer Link, Figs. 553, 554	[illegible]
Links, Figs. 848, 848½, per pair	[illegible]
Crosshead, Figs. 848, 848½	[illegible]
Long Connecting Rods, Figs. 550, 551, 847, 847½	[illegible]
Long Flat Rod, Figs. 553, 554	[illegible]
Long Polished Round Rod, Figs. 848, 848½	[illegible]
Lever, Bearer, Brace Bolts and Set Screws	[illegible]
Pin through Rod, Figs. 553, 554	[illegible]
Brace	[illegible]
Extra Connecting Pipe and Rod per foot	[illegible]

Cylinder Repairs, see page 330.

WELL PUMP, FIG. 1039, AND WELL PUMP STANDARD. FIG. 1032.

	Fig. 1039,	Fig. 1032,	
STROKE	6-in.	6-in.	10-in.
Lever or Handle	$1.00	$1.00	$1.25
Fulcrum or Bearer	1.25	1.25	1.50
Stock or Standard	3.50	3.50	3.50
Bearer Link	.25	.25	.50
Rod	.75	.50	.75
Pin of Malleable Iron	.10	.10	.10
Brace	.50	.50	.50
Rod Coupling	.20	.20	.20

Cylinder Repairs, see page 330.

GOULDS "STAR" WELL PUMPS, FIGS. 206, 207, 212 AND PUMP STANDARD, FIG. 845.

No.	1	2	3	4	5
Lever or Handle	$0.75	$0.75	$0.85	$0.85	$0.85
Fulcrum or Bearer Top	.75	.75	.80	.80	.85
Stock or Standard only	2.00	2.25	2.60	2.75	3.00
Base	.75	.75	.85	1.00	1.00
Brace	.50	.50	.50	.50	.50
Long Connecting Rod	.50	.50	.50	.50	.50
Leather Packing for Base	.15	.15	.15	.15	.20
Lever, Bearer, Base and Brace Bolts	.08	.08	.08	.08	.08
Extra Connecting Pipe and Rod, Fig. 207, per feet	.50	.50	.50	.50	.50
2 feet Cast Set Length, Fig. 206	1.75	1.75	1.75	1.75	1.75
3 feet Cast Set Length, Fig. 206	2.25	2.25	2.25	2.25	2.25
Set Lengths Complete		3.50		4.00	

Cylinder Repairs—See page 330.

GOULDS WELL FORCE PUMP, FIG. 1153.

Air Chamber with Tube and Thumb-screw	$2.50
Thumb-screw only	.15
Fulcrum and Clamp	1.50
Fulcrum Clamp only	.25
Lever	1.00
Link	.25
Cross Head	.25
Brass Gland	.50
Hose Tube Nut	.25
Hose Tube	.25
Plunger Rod	.75
Brace	.50
Adjustable Brace Ring	.50
Brace Ring Set Screw	.05
Adjustable Base with Set Screws	1.50
Base Set Screws (2) each	.05
Reducer	.25
Bearer, Lever Pins and Sundry Bolts, each	.08

Cylinder Repairs—See page 330.

GOULDS WELL LIFT PUMP, FIG. 1252.

Top Section only	$1.50
Fulcrum	.75
Lever	1.00
Plunger Rod	.75
Adjustable Base with Set Screws	1.00
Base Set Screws (2) each	.05
Brace	.50
Adjustable Brace Ring	.50
Brace Ring Set Screw	.05
Sundry Bolts	.08

Cylinder Repairs—See page 330.

GOULDS "STAR" WELL FORCE PUMPS AND STANDARDS, FIGS. 1244, 1245, 852½, 882½, 852, 882 ALL SIZES. FIGS. 853, 883 NOS. 0, 1, 2.

Lever or Handle	$1.25
Fulcrum or Bearer Top	1.25
Stock or Standard only, Figs. 852, 882 and 853, 883 No. 2	5.25
Stock or Standard only, Figs. 852½, 882½ and 853, 883 No. 1	4.75
Stock or Standard only, Figs. 1244, 1245 and 853, 883 No. 0	4.50
Links per pair	.25
Cross Head, including Set Screw	.50
Long Polished Round Rod, Figs. 1244, 1245, 852½, 882½, 852, 882	.75
Short Polished Round Rod, Figs. 422, 423	.60
Brass Gland	.75
Air Chamber Inside Tube	.80
Spout, Figs. 852 and 852½, 1244 and 853	0.50
Cock Spout, Figs. 882 and 882½, 1245, 883	2.50
Iron Cock Body and Brass Valve Seat, Figs. 882, 882½, 1245, 883	1.00
Cock Body only, iron, Figs. 882, 882½, 1245, 883	.80
Brass Valve Seat only, Figs. 882, 882½, 1245, 883	.20
Brass Cap for Cock, Figs. 882, 882½, 1245, 883	.50
Brass Packing Ring for Cock, Figs. 882, 882½, 1245, 883	.15
Brass Valve Stem for Cock, Figs. 882, 882½, 1245, 883	.60
Brass Valve Body for Cock, Figs. 882, 882½, 1245, 883	.40
Valve Packing for Cock, Figs. 882, 882½, 1245, 883	.05
Cap Packing for Cock, Figs. 882, 882½, 1245, 883	.05
Small Brass Nut for Cock, Figs. 882, 882½, 1245, 883	.04
Hose Tube Nut for Cock., Figs. 882, 882½, 1245, 883	.25
Hose Tube	.25
Back Plug	.25
Brace	.50
Leather Spout Packing	.25
Leather Ring Packing	.10
Brass Thumb Screw	.25
Sundry Bolts	.08
Extra Connecting Pipe and Rod, per foot	.50

Cylinder Repairs, see page 330.

GOULDS "STAR" WIND MILL FORCE PUMPS AND STANDARDS, FIGS. 1247, 1248, 424, 426 AND 422, 423.

Lever or Handle	$1.40
Fulcrum and Guide, Figs. 422. 423 No. 0, and Figs. 1247, 1248	1.50
Pat. Extension Stroke Guide, Figs. 422, 423 No. 0, and Figs. 1247, 1248	.25
Fulcrum 6-in. Stroke, Figs. 422, 423 Nos. 1 and 2, and Figs. 424 426	1.50
Fulcrum 10-in. Stroke, Figs. 422, 423 Nos. 1 and 2 and Figs. 424 426	1.75
Fulcrum Link, 6-in. Stroke	.50
Fulcrum Link. 10-in. Stroke	.75
Stock or Standard only, Figs. 422 and 423 No. 2	5.25
Stock or Standard only, Figs. 422, 423 No. 1 and 424, 426	4.75
Stock or Standard only. Figs. 422, 423 No. 0 and 1247, 1248	4.50
Short Flat Rod, Figs. 422, 423 Nos. 1 and 2 and 424, 426	.50
Rod Coupling and Set Screw, Figs. 422, 423 Nos. 1 and 2 and 424, 426	.25
Short Polished Round Rod, Figs. 422, 423 Nos. 1 and 2	.60
Long Round Plunger Rod Polished at Top, Figs. 424 and 426	.75
Short, Flat and Round Rod, Figs. 422, 423 No. 0	1.00
Long, Flat and Round Rod, Figs. 1247, 1248	1.25
Brass Gland	.75
Air Chamber Inside Tube	.80
Spout, Figs. 422, 424, 1247	.50
Cock Spout Complete, Figs. 423, 426, 1248	2.50
Iron Cock Body and Brass Valve Seat, Figs. 423, 426, 1248	1.00
Iron Cock Body only, Figs. 423, 426, 1248	.80
Brass Valve Seat only for Cock, Figs. 423, 426, 1248	.20
Brass Cap for Cock, Figs. 423, 426, 1248	.50

GOULDS "STAR" WIND MILL FORCE PUMPS AND STANDARDS, FIGS. 1247, 1248, 424, 426 AND 422, 423.

Brass Packing Ring for Cock, Figs. 423, 426, 1248	$0.15
Brass Valve Stem for Cock, Figs. 423, 426, 1248	.60
Brass Valve Body for Cock, Figs. 423, 426, 1248	.40
Valve Packing for Cock, Figs. 423, 426, 1248	.05
Cap Packing for Cock, Figs. 423, 426, 1248	.05
Small Brass Nut for Cock, Figs. 423, 426, 1248	.04
Hose Tube Nut	.25
Hose Tube	.25
Back Plug	.25
Brass Thumb Screw	.25
Brace	.50
Wind Mill Slide	.50
Female Wood Rod Coupling	.25
Leather Spout Packing	.15
Leather Ring Packing	.10
Bearer, Lever, Spout, Hook and Brace Bolts	.08
Pin through Flat Rod	.15
Extra Connecting Pipe and Rod, per foot	.50

Cylinder Repairs, see page 330.

GOULDS WELL FORCE PUMP, FIG. 854 AND PUMP STANDARD, FIG. 855.

	ALL SIZES.
Lever or Handle	$1.40
Fulcrum or Bearer Top	1.25
Stock or Standard only	3.60
Links per pair	.25
Crosshead, including Nut and Set Screw	.50
Long Polished Round Rod	.75
Polished Round Rod, Fig. 855	.60
Brass Gland	.75
Air Chamber only	3.00
Air Chamber Cap	.45
Air Chamber Inside Tube	.30
Air Chamber Nut	.50
Spout	.25
Spout Hose Tube Nut	.25
Spout Hose Tube	.25
Brace	.50
Lever, Bearer, Flange and Brace Bolts	.08
Leather Packing for Air Chamber	.25
Leather Ring Packing	.10
Extra Connecting Pipe and Rod, per foot	.50

Cylinder Repairs, see page 330.

GOULDS "EMPIRE" DOUBLE-ACTING WELL FORCE PUMPS, FIGS. 1025, 1026, 1027 AND 1028.

No.	2	4
DIAMETER OF LOWER CYLINDER, INCHES	2½	3
Lever or Handle, Figs. 1025 and 1027	$1.00	$1.00
Lever or Handle, Figs. 1026 and 1028	1.25	1.25
Bearer Link, Figs. 1026 and 1028	.35	.35
Stock only, two sides, Figs. 1025 and 1027	4.00	4.00
Stock only, two sides, Figs. 1026 and 1028	4.50	4.50

GOULDS "EMPIRE" DOUBLE-ACTING WELL FORCE PUMPS, FIGS. 1025, 1026, 1027 AND 1028.—Continued.

No.	2	4
DIAMETER OF LOWER CYLINDER, INCHES	2½	3
Spout	$0.50	$0.50
Spout Hose Tube	.25	.25
Spout Hose Tube Nut	.25	.25
Spout Swivel Nut	.25	.25
Spout Swivel Pipe Coupling	.25	.25
Crosshead, Figs. 1025 and 1027	.25	.25
Upper Plunger Rod, Figs. 1025 and 1027	.75	.75
Flat Wind Mill Rod, Figs. 1026 and 1028	.50	.50
Connecting Rod, Figs. 1026 and 1028	.50	.50
Pin Connecting Lever and Rod, Figs. 1026 and 1028	.15	.15
Rod Coupling, Figs. 1026 and 1028	.10	.10
Standard and Spout complete; no Pipes or Rod, Figs. 1025 and 1027	6.50	6.50
Standard and Spout complete; no Pipes or Rod, Figs. 1026 and 1028	7.25	7.25
Set-Length complete, Pipes, Rod and Upper Cylinder, Figs. 1025 and 1027	5.00	6.00
Set-Length complete, Pipes, Rod and Upper Cylinder, Figs. 1026 and 1028	7.50	8.50
Air Chamber Pipe	.50	.50
Air Chamber Pipe Cap	.15	.15
Discharge Pipe	.50	.50
Three-Way Cock	2.25	2.25
Three-Way Cock Lever	.15	.15
Three-Way Cock Rod and Coupling	.50	.50
Three-Way Cock Coupling only	.10	.10
Brass-Lined Upper Cylinder complete	4.00	5.00
Brass-Lined Upper Cylinder only	2.00	2.75
Bottom Attachment	1.00	1.00
Plunger and Short Rod	1.00	1.25
Plunger Rod only	.50	.50
Plunger Discs (2) each	.15	.15
Plunger Nuts (2) each	.05	.05
Plunger Leather	.10	.15
Plunger Rod Coupling	.10	.10
Strainer	.60	.60
Lever, Link, Stock Bolts and Set Screws, each	.08	.08
Lower Cylinder Shell, Brass Body	4.50	5.25
Lower Cylinder Shell, Brass-Lined	4.00	4.50
Lower Cylinder, Brass Lining only	1.50	1.75
Lower Cylinder, Top Attachment	.75	.75
Lower Cylinder, Leather Lower Valve, complete	.25	.25
Lower Cylinder, Plunger complete, no rod	2.75	3.00
Lower Cylinder, Plunger Rod	.15	.15
Lower Cylinder, Brass Plunger Cage only	.75	.90
Lower Cylinder, Brass Poppet Valve	.20	.30
Lower Cylinder, Plunger Follower, Iron	.85	1.00
Lower Cylinder, Plunger Follower Ring, Iron	.25	.30
Lower Cylinder, Plunger Crimped Leathers (2) each	.15	.25
Lower Cylinder, Bottom Attachment with "Universal" Bronze Lower Valve and Seat, complete	2.25	2.25
Lower Cylinder, Bottom Attachment only	1.00	1.00
Lower Cylinder, "Universal" Bronze Lower Valve and Seat, complete	1.25	1.20
Lower Cylinder, "Universal" Bronze Seat and Cage only	1.00	1.00
Lower Cylinder, "Universal" Cage, Top only	.25	.35
Lower Cylinder Poppet (leather-faced) for "Universal" Lower Valve	.25	.25
Lower Cylinder, Leather Face for Poppet, for "Universal" Lower Valve	.10	.10
Lower Cylinder, Ring Packings, each	.10	.10
Universal Bushing, for Deep Wells	1.00	1.00

GOULDS "ADVANCE" DOUBLE-ACTING WELL FORCE PUMPS.
Figs. 1146, 1147 and 1148.

No.	2	4
DIAMETER OF LOWER CYLINDER, INCHES	2½	3
Lever or Handle, Fig. 1146	$1.00	$1.00
Lever or Handle, Figs. 1147 and 1148	1.25	1.25
Bearer, Fig. 1146	1.15	1.15
Bearer, Figs. 1147 and 1148	1.35	1.35
Bearer Link, Figs. 1147 and 1148	.35	.35
Bearer Pin	.10	.10
Lever Pin	.10	.10
Link Pin, Figs. 1147 and 1148	.10	.10
Crosshead, Fig. 1146	.25	.25
Pipe Clamp with Bolts	.75	.75
Spout	.50	.50
Spout Swivel Nut	.25	.25
Spout Swivel Pipe Coupling	.25	.25
Spout Hose Tube	.25	.25
Spout Hose Tube Nut	.25	.25
Base	1.75	1.75
Rod Guide	.25	.25
Air Chamber Pipe or Standard, Fig. 1146	.50	.50
Air Chamber Pipe or Standards, Figs. 1147 and 1148	.55	.55
Discharge Pipe	.35	.35
Differential Plunger Rod, Fig. 1146	.75	.75
Flat Wind Mill Rod, Figs. 1147 and 1148	.50	.50
Differential Plunger Rods, Figs. 1147 and 1148	.75	.75
Short Lower Plunger Rod	.15	.15
Lower Plunger Rod Nuts (2) each	.05	.05
Upper Rod Couplings, Figs. 1147 and 1148	.25	.25
Lower Rod Coupling	.10	.10
Rod Guide, Fig. 1148	.25	.25
Upper Cylinder, Top Attachment	1.00	1.15
Upper Cylinder or Working Head, Fig. 1146	1.50	1.75
Upper Cylinder or Working Head, Figs. 1147 and 1148	1.75	2.00
Brass Differential Cylinder, Fig. 1146	1.00	1.25
Brass Differential Cylinder, Figs. 1147 and 1148	1.15	1.40
Differential Plunger Plate (upper)	.15	.15
Differential Plunger Plate (lower)	.15	.15
Differential Plunger Leather	.10	.15
Differential Plunger Nuts (2) each	.05	.05
Lower Cylinder Shell (Brass Lined) Fig. 1146	4.00	4.50
Lower Cylinder Shell (Brass Lined) Figs. 1147 and 1148	4.70	5.30
Lower Cylinder Shell (Brass Body) Fig. 1146	4.50	5.25
Lower Cylinder Shell (Brass Body) Figs. 1147 and 1148	6.00	7.00
Lower Cylinder Top Attachment	1.00	1.00
Lower Cylinder Plunger Complete, no Rod	2.75	3.00
Lower Cylinder Plunger Rod	.15	.15
Lower Cylinder, Brass Plunger Cage only	.75	.90
Lower Cylinder, Brass Poppet and Valve	.20	.30
Lower Cylinder Plunger Crimps (2) each	.15	.25
Lower Cylinder Plunger Follower, iron	.85	1.00
Lower Cylinder Plunger Follower Ring, iron	.25	.30
Lower Cylinder Bottom Attachment with "Universal" Bronze Valve and Seat Complete	2.25	2.25
Lower Cylinder "Universal" Bronze Lower Valve and Seat Complete	1.25	1.25
Lower Cylinder "Universal" Bronze Seat and Cage only	1.00	1.00
Lower Cylinder "Universal" Cage Top only	.25	.25
Lower Cylinder Poppet (Leather Faced) for "Universal" Lower Valve	.25	.25
Lower Cylinder Leather Face for Poppet "Universal" Lower Valve	.10	.10
Lower Cylinder Ring Packings, each	.10	.10
Three-Way Valve Case, Fig. 1148	1.50	1.50
Three-Way Valve Seat, Fig. 1148	.50	.50
Three-Way Valve Lever, Fig. 1148	.25	.25
Three-Way Valve Upper Rod, Fig. 1148	.50	.50

GOULDS "ADVANCE" DOUBLE-ACTING WELL FORCE PUMPS.
FIGS. 1146, 1147 AND 1148.—Continued.

No.	2	4
DIAMETER OF LOWER CYLINDER, INCHES	2½	3
Three-Way Valve Lower Rod, Fig. 1148	$1.00	$1.00
Three-Way Valve Rod Coupling, Fig. 1148	.10	.10
Thrhe-Way Valve Rubber Discs (2) each, Fig. 1148	.25	.25
Three-Way Valve Washer, Fig. 1148	.05	.05
Three-Way Valve Nuts (2) each, Fig. 1148	.05	.05
Three-Way Valve Lever Fulcrum Collar, Fig. 1148	.50	.50
Three-Way Valve Lever Fulcrum Bolt, Fig. 1148	.10	.10
Three-Way Rod Bolt, Fig. 1148	.25	.25
Three-Way Valve Brass Gland, Fig. 1148	1.00	1.00
Three-Way Valve Discharge Elbow, Fig. 1148	.50	.50
Three-Way Valve Discharge Elbow Nut, Fig. 1148	.50	.50
Three-Way Valve Discharge Packing, Fig. 1148	.10	.10
Strainer	.60	.60
Universal Bushing for Deep Wells	1.00	1.00

GOULDS "STAR" WELL PUMP STANDARDS, FIGS. 846, 849, 850.

No.	3	4	5
Lever or Handle	$1.00	$1.25	$1.25
Fulcrum or Bearer Top, Figs. 846, 849	.90	1.10	1.10
Fulcrum or Bearer Top, Fig. 850	1.15	1.35	1.35
Stock or Standard only	3.75	4.25	4.75
Links, Fig. 850, per pair	.25	.25	.25
Crosshead, including Nut and Set Screws, do.	.50	.50	.50
Connecting Rod, Figs. 846, 849	.25	.25	.25
Polished Round Rod, Fig. 850	.60	.60	.60
Brace	.50	.50	.50
Lever, Bearer, Brace Bolts and Set Screws	.08	.08	.08

GOULDS WELL PUMP STANDARD, FIG. 486.

Lever or Handle	$1.50
Stock or Standard only	5.00
Cap for Standard	.30
Connecting Rod	.25
Spout	.50
Brace	.50
Leather Packing for Spout	.25
Lever, Bearer, Cap, Spout and Brace Bolts	.08

GOULDS HEAVY DEEP WELL PUMP STANDARDS, FIGS. 236, 237, 887.

Lever	$1.75
Top Section	3.00
Intermediate Flange, 1¼ in	.50
Intermediate Flange 1½ or 2 in	.60
Bottom Section	4.00
Brace	.60
Top-Knot, no link	.35
Link for same	.15
Polished Round Rod	.60
Cap, Fig. 236	.50
Cap, Figs. 237, 887	.75
Gland, Figs. 237, 887	.50
Spout, Fig. 236	.50
Air Chamber only, Figs. 237, 887	3.50
Air Chamber Cap, Figs. 237, 887	.50
Air Chamber Cock Nut, Figs. 237, 887	.50
Hose Tube, Figs. 237, 887	.35
Hose Tube Nut, Figs. 237, 887	.35
Air Chamber Inside Tube, Fig. 237, 887	.30
Intermediate Spout Elbow, Fig. 237	.75
Cock, Fig. 887	3.00
Leather Packings for Spout Intermediate Flange or A. C.	.15
Leather Ring Packings, A. C. Cap, Cock Nut or Hose Tube Nut.	.10
Lever, Bearer, Flange and Brace, Bolts, Etc	.12
A. C. Complete	5.50

GOULDS HEAVY DEEP WELL PUMP STANDARDS, FIGS. 592, 593. 763.

Lever, Figs. 592, 593	$2.75
Lever for Wood Brake, Fig. 763	2.75
Wood Brakes, Fig. 763, each	.50
Fulcrum or Bearer Top	3.00
Top Section	4.00
Intermediate Flange, 1¼ inch pipe	.50
Intermediate Flange, 1½, 2 and 2½ inch pipe	.60
Bottom Section	6.50
Links, per pair	.40
Crosshead, including Nuts and Set Screws	.70
Polished Round Rod	.60
Cap, Fig. 592	.50
Cap, Figs. 593, 763	.90
Glands, Figs. 593, 763	.50
Spout, Fig. 592	.75
Air Chamber only, Figs. 593, 763	4.00
Air Chamber, Cap, Figs. 593, 763	.50
Air Chamber Inside Tube, ditto	.35
Hose Tube Nut, ditto	.35
Hose Tube, ditto	.35
Braces, each	.75
Leather Packing for Spout, Intermediate Flange or Air Chamber	.25
Leather Ring Packing, Air Chamber and Hose Tube Nuts	.10
Flange, Hook and Brace Bolts	.12
Lever and Bearer Pins, only	.15
Spring Cotters for ditto	.05
Thumb Screw, Fig. 763	.25

GOULDS WELL PUMP STANDARDS, FIGS. 857, 858.

Lever or Handle	$1.25
Fulcrum or Bearer Top	1.25
Stock or Standard only, Fig. 857	6.50
Top Section only, Fig. 858	2.40
Intermediate Flange, Fig. 858, 1¼ in	.50
Intermediate Flange, Fig. 858, 1½, 2, 2½ in	.60
Bottom Section	3.60
Links, per pair	.25
Crosshead, including Nuts and Set Screws	.50
Polished Round Rod	.60
Brass Gland	.75
Stuffing Box Plug	.25
Air Chamber only	3.00
Air Chamber Cap	.35
Air Chamber Inside Tube	.30
Air Chamber Nut	.50
Air Chamber Spout Piece	.25
Air Chamber Hose Tube Nut	.25
Air Chamber Hose Tube	.25
Brace	.50
Leather Packing for Intermediate Flange or Air Chamber	.25
Lever Bearer, Flange, Hook and and Brace Bolts	.08
Leather Ring Packing	.10

GOULDS WIND MILL PUMP STANDARDS, FIGS. 762, 780.

No.	3	4	5
Lever or Handle, Fig. 762	$1.25	$1.40	$1.40
Lever or Handle, Fig. 780		1.75	1.75
Fulcrum or Bearer Top, Fig. 762, 6-in. stroke	1.25	1.35	1.35
Fulcrum or Bearer Top, Fig. 762, 10-in. stroke		1.50	1.50
Fulcrum or Bearer Top, Fig. 780		2.00	2.00
Bearer Link, Fig. 762, 6-in. stroke	.50	.50	.50
Bearer Link, Fig. 762, 10-in. stroke and Fig. 780		.75	.75
Stock or Standard only	3.75	4.25	4.75
Flat Rod	.60	.60	.60
Wind Mill Slide	$0.50	$0.50	$0.50
Female Wood Rod Coupling	.25	.25	.25
Rod Coupling	.10	.10	.10
Pin	.15	.15	.15
Brace	.50	.50	.50
Lever, Bearer, Brace Bolts and Set Screws	.08	.08	.08

GOULDS "STAR" WIND MILL PUMP STANDARD, FIG. 412.

Lever or Handle	$1.40
Fulcrum or Bearer Top, 6-in. Stroke	1.35
Fulcrum or Bearer Top, 10-in. Stroke	1.50
Bearer Link, 6-in. Stroke	.50
Bearer Link, 10-in. Stroke	.75
Top Section	2.40
Intermediate Flange, 1¼-in. Pipe	.50
Intermediate Flange, 1½, 2, 2½-in. Pipe	.60
Bottom Section	3.60
Flat Rod	.60
Brace	.50
Pin	.15
Wind Mill Slide	.50
Female Wood Rod Coupling	.25
Leather Packing Intermediate Flange	.25
Lever Bearer Flange, Brace Bolts and Set Screws	.08

GOULDS WIND MILL PUMP STANDARDS, FIG. 764, 765.

Lever or Handle	$2.00
Fulcrum or Bearer Top, 6-in. Stroke	3.50
Fulcrum or Bearer Top, 10-in. Stroke	4.25
Bearer Link, 6-in. Stroke	.75
Bearer Link, 10-in. Stroke	1.00
Top Section	4.00
Intermediate Flange, 1¼-in. Pipe	.50
Intermediate Flange, 1½, 2, 2½-in. Pipe	.60
Bottom Section	6.50
Short Flat Rod	.50
Pin through Flat Rod	.15
Rod Connection and Set Screw	.25
Polished Round Rod	.60
Cap, Fig. 764	.50
Cap, Fig. 765	.90
Gland, Fig. 765	.50
Spout, Fig. 765	.25
Air Chamber Spout Nut, Fig. 765	.50
Spout, Fig. 764	.75
Air Chamber only, Fig. 765	4.00
Air Chamber Cap, Fig. 765	.50
Air Chamber Inside Tube, Fig. 765	.35
Hose Tube Nut, Fig. 765	.35
Hose Tube, Fig. 765	.35
Braces, each	.75
Leather Packing for Spout, Intermediate Flange or Air Chamber	.25
Leather Ring Packing	.10
Female Wood Rod Coupling	.25
Wind Mill Slide	.50
Lever, Bearer, Flange, Hook and Brace Bolts	.12

GOULDS "STAR" WIND MILL FORCE PUMP STANDARDS, FIGS. 401, 402.

Lever or Handle	$1.40
Fulcrum or Bearer Top, 6-in. stroke	1.35
Fulcrum or Bearer Top, 10-in. stroke	1.75
Bearer Link, 6-in. stroke	.50
Bearer Link, 10-in. stroke	.75

GOULDS "STAR" WIND MILL FORCE PUMP STANDARDS, FIGS. 401, 402.—Continued.

Stock or Standard only, Fig. 401	$6.50
Top Section, Fig. 402	2.40
Intermediate Flange, 1¼ in., Fig. 402	.50
Intermediate Flange, 1½, 2, 2½ in., Fig. 402	.60
Bottom Section, Fig. 402	3.60
Short Flat Rod	.50
Rod Coupling and Set Screw	.15
Polished Round Rod	.60
Brass Gland	.75
Stuffing Box Plug	.25
Air Chamber only	3.00
Air Chamber Cap	.35
Air Chamber Tube	.35
Air Chamber Nut	.45
Air Chamber Spout	.25
Hose Tube Nut	.25
Hose Tube	.25
Brace	.50
Leather Packing Intermediate Flange or Air Chamber	.25
Leather Ring Packings	.10
Lever, Bearer, Flange, Hook, Brace Bolts, Etc	.08
Wind Mill Slide	.50
Female Wood Rod Coupling	.25
Pin Connecting Lever and Rod	.15

GOULDS WIND MILL DISTRIBUTING HEADS, FIGS. 1031, 1033, 1061, 1045 AND 1048.

Standard, Brace, Bearer, Lever, Link, Flat-Rod and Coupling, 6-in. Stroke	$7.25
Standard, Brace, Bearer, Lever, Link, Flat-Rod and Coupling, 10-in. Stroke	8.25
Standard, Brace, Bearer, Lever, Link, Flat-Rod and Coupling, Adjustable Stroke	9.25
Standard only	4.00
Brace	.50
Fulcrum or Bearer Top, 6-in. Stroke	1.25
Fulcrum or Bearer Top, 10-in. Stroke	1.50
Fulcrum or Bearer Top, Adjustable Stroke	2.00
Bearer Link, 6-in. Stroke	.50
Bearer Link, 10-in. Stroke	.75
Bearer Link, Adjustable Stroke	.75
Lever or Handle, 6-in. Stroke	1.00
Lever or Handle, 10-in. Stroke	1.35
Lever or Handle, Adjustable Stroke	1.75
Bearer, Brace, Link and Lever Bolts, each	.08
Base or Platform and Set-Length Complete, including Working Head. Discharge Pipe and Spout, Figs. 1031 and 1048	13.50
Base or Platform and Set-Length Complete, including Working Head, Discharge Pipe and Spout, Figs. 1033 and 1045	15.00
Base or Platform, Figs. 1031 and 1048	1.75
Base or Platform, Figs. 1033 and 1045	2.00
Guide Plate	.25
Tap Bolts, Set Screws for Base Guide Plate and Discharge Pipe, each	.08
Spout	1.00
Spout Hose Tube	.25
Spout Hose Tube Nut	.25
Wheel Handle	.25
Lock Nut	.25
Valve Rod Brass Screw	1.00
Valve Rod Gland	.50
Valve Rod	.75
Discharge Pipe	2.25
Air Chamber Pipe, Figs. 1031 and 1048	2.00
Air Chamber Pipe, Figs. 1033 and 1045	2.75
Working Head Complete	7.00

GOULDS WIND MILL DISTRIBUTING HEADS, FIGS. 1031, 1033, 1061, 1045 AND 1048.—Continued

Working Head only, Figs. 1031 and 1048	$2.25
Working Head only. Figs. 1033 and 1045	2.50
Working Head Stuffing Box	.50
Working Head Gland	.50
Working Head Lower Flange	.50
Working Head Elbow	.40
Working Head Elbow Nut	.25
Valve Case only	.50
Valve Case Lock Nut	.35
Valve Discs, (2) each	.25
Valve Plate	.25
Valve Rod Nut	.05
Flat Wind Mill Rod, 6-in. Stroke	.50
Flat Wind Mill Rod, 10-in. Stroke	.60
Flat Wind Mill Rod, Adjustable Stroke	.65
Long Round Middle Rod	.50
Brass Cased Plunger Rod	.75
Rod Couplings, each	.15
Wind Mill Connection	.50
Wind Mill Rod Pin	.10
Leather Packing Rings, each	.08
Wrench	.25
Suction Flange Leather	.20
Sundry Bolts and Set Screws, each	.30
Fig. 1061, Forked Rod	2.00
Fig. 1061, Rod for Weight	.50
Fig. 1061, Weight	2.00
Fig. 1061, Regulator Cylinder	10.00
Fig. 1061, Chain	.50
Fig. 1061, Spring	1.25

Repairs for Cylinders, see page 330.

GOULDS "SOUTHERN STAR" WIND MILL FORCE PUMP STANDARD, FIG. 413.

Lever or Handle	$1.40
Fulcrum or Bearer Top, 6-in. stroke	1.50
Fulcrum or Bearer Top, 10-in. stroke	1.75
Bearer Link, 6-in. stroke	.50
Bearer Link 10-in. stroke	.75
Stock or Standard only	6.00
Intermediate Flange, 1¼-in. pipe	.50
Intermediate Flange, 1½, 2, 2½-in pipe	.60
Base	2,00
Short Flat Rod	.50
Rod Coupling and Set Screw	.15
Brass Cased Rod	1.00
Brass Gland	.75
Stuffing Box Plug	.25
Air Chamber only	3,00
Air Chamber Discharge Nut	.45
Air Chamber Brass Discharge Tube, 1¼ in	.50
Air Chamber Inside Tube	.30
Air Chamber Cock Nut	.50
Air Chamber Valve complete	.35
Air Chamber Valve, leather only	.20
Air Chamber Valve Weight only	.15
Air Chamber Valve Screw and Washer	.05
Cock	2.50
Cock Handle	.25
Brace	.50
Wind Mill Slide	.50
Female Wood Rod Coupling	.25
Leather Packing Intermediate Flange	.25
Leather Ring Packing A. C Cap or Cock Nut	.10
Lever, Bearer Flange, Brace and Hook Bolts	.08
Pin Connecting Lever and Rod	.15

GOULDS WIND MILL DISTRIBUTING HEADS, FIG. 862, 866.

Fig. 862, Standard Complete, 6-in. stroke, including Rod and Coupling	$7.50
Fig. 862, Standard Complete, 10-in. stroke including Rod and Coupling	9.00
Fig. 866, Standard Complete, including Rod and Coupling	10.00
Set Length Complete, including Pipe and Valve Rod	12.50
Fig. 862, Lever or Handle	1.40
Fig. 862, Fulcrum or Bearer Top, 6-in. stroke	1.35
Fig. 862, Fulcrum or Bearer Top, 10-in. stroke	1.50
Fig. 862, Bearer Link, 6-in. stroke	.50
Fig. 862, Bearer Link, 10-in. stroke	.75
Fig. 866, Lever or Handle	1.75
Fig. 866, Fulcrum or Bearer Top	2.50
Fig. 866, Bearer Link	.75
Stock only, two sides	4.00
Spout	.50
Spout Hose Attachment	.25
Lower Working Head only	2.00
Working Head Stuffing Box	.50
Discharge Pipe	1.20
Working Head Brass Glands, two, each	.50
Working Head Plates, two, each	.25
Working Head Valve Seat	.75
Working Head Lock Nut	.25
Working Head Valve Disc	.25
Working Head Valve Rubbers, two	.25
Working Head, Elbow Nut	.35
Working Head Brass Elbow	1.00
Working Head Suction Flange	.50
Flat and Round Plunger Rod	1.00
Brass-Cased Plunger Rod	.75
Upper Valve Rod	.50
Lower Valve Rod, Brass Cased	.75
Valve Handle	25
Valve Handle Stop	.15
Valve Rod Coupling and Set Screw	.25
Gas Pipe Cap	.15
Pin	.15

GOULDS WIND MILL DISTRIBUTING HEADS, FIGS. 862, 866.—Continued.

Bolts and Set Screws	$0.08
Wind Mill Slide	.50
Female Wood Rod Coupling	.25
Air Chamber Pipe	2.00

GOULDS WIND MILL FORCE PUMP, FIG. 863.

Standard Complete, including Rod and Coupling	$7.00
Set Length Complete, including Pipe and Valve Rod	12.00
Lever or Handle	1.25
Fulcrum or Bearer Top	1.25
Bearer Link	.50
Stock, two sides	3.50
Spout	.50
Hose Connection	.25
Lower Working Head only	1.50
Lower Brass Glands, each	.50
Lower Working Head Valve, Seat	.50
Lower Working Head Lock Nut	.25
Lower Working Head Valve Disc	.25
Lower W. H. Rubbers, two, each	.25
Elbow Nut	.35
Brass Elbow	1.00
Flat and Round Rod	1.00
Rod Coupling	.10
Brass Cased Plunger Rod	.75
Valve Handle	.25
Valve Handle Stop	.15
Upper Valve Rod	.50
Valve Rod, Coupling and Set Screw	.25
Brass Cased Valve Rod	.50
Gas Pipe Cap	.15
Wind Mill Slide	.50
Female Wood Rod Coupling	.25
Pin	.15
Bolts and Set Screws	.08
Small Nut and Washer	.05

CYLINDERS OR WORKING BARRELS, FIGS. 1230, 1231, 1235, 1236, 1267, 1268

No.	0	1	2	3	4	5	6	8	10	12	16	24
DIAMETER CYLINDER, INCHES	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6	8
Shell or Body, Iron, 10½ in.	$1.50	$1.50	$1.60	$1.80	$2.00	$2.25	$2.50	$3.25	....	....	....	....
Shell or Body, Iron, 12 in.	2.25	2.30	2.45	2.45	2.70	3.00	3.50	3.80	....	....	....	....
Shell or Body, Iron, 14 in.	2.75	2.75	2.75	2.95	3.20	3.50	3.75	4.55	$8.00	$11.50	$15.50	....
Shell or Body, Iron, 16 in.	3.00	3.00	3.00	3.30	3.55	3.80	4.05	4.80	8.25	14.50	18.25	....
Shell or Body, Iron, 18 in.	....	....	....	....	....	....	....	....	9.00	16.00	20.00	$30.00
Shell or Body, Iron, 20 in.	....	4.30	4.55	4.80	5.05	5.30	5.50	8.00	....	....	....	....
Shell or Body, Iron, 22 in.	....	....	....	....	....	....	....	....	12.50	20.00	27.50	37.50
Shell or Body, Brass-Lined, 10½ in.	2.75	3.00	3.25	3.50	3.75	4.00	4.25	5.00	....	....	....	....
Shell or Body, Brass-Lined, 12 in.	3.15	3.65	4.00	4.10	4.50	5.00	5.35	6.20	....	....	....	....
Shell or Body, Brass-Lined, 14 in.	4.25	4.40	4.70	4.90	5.30	5.85	6.20	7.35	11.50	17.00	22.00	....
Shell or Body, Brass-Lined, 16 in.	4.50	4.75	5.05	5.40	5.80	6.30	6.65	8.75	12.25	19.50	26.00	....
Shell or Body, Brass-Lined, 18 in.	....	....	....	....	....	....	....	....	14.00	22.50	30.00	40.00
Shell or Body, Brass-Lined, 20 in.	6.00	6.25	6.50	7.00	7.50	8.00	9.00	11.00	....	....	....	....
Shell or Body, Brass-Lined, 22 in.	....	....	....	....	....	....	....	....	17.50	27.50	37.50	50.00
Shell or Body, Brass, 10½ in.	3.50	3.50	4.00	4.25	4.75	5.00	5.50	6.75	....	....	....	....
Shell or Body, Brass, 12 in.	4.00	4.00	4.50	4.75	5.25	5.75	6.25	7.25	....	....	....	....
Shell or Body, Brass, 14 in.	4.75	4.75	5.25	5.50	6.25	6.75	7.25	10.50	17.00	25.75	40.00	....
Shell or Body, Brass, 16 in.	5.25	5.25	6.00	6.25	7.00	7.50	8.25	11.00	19.50	29.75	45.00	....
Shell or Body, Brass, 18 in.	....	....	....	....	....	....	....	....	24.00	34.75	50.00	100.00
Shell or Body, Brass, 20 in.	6.50	6.50	7.50	7.75	8.75	9.25	10.25	16.00	29.00	39.75	55.25	110.50
Shell or Body, Brass, 22 in.	....	....	....	....	....	....	....	....	30.00	42.50	62.50	125.00
"AA," Iron Plunger, no rod	.75	.75	.80	.90	1.00	1.25	1.60	2.00	....	....	....	....
"AA," Brass Cage and Valve Plunger, no rod	1.15	1.15	1.25	1.35	1.50	2.00	2.50	3.00	....	....	....	....
"AA," All Brass Plunger, no rod	1.50	1.50	1.60	1.80	2.00	2.50	3.25	4.00	....	....	....	....
"BB," Iron Plunger, no rod	1.60	1.60	1.75	1.75	2.00	2.50	3.00	4.00	5.25	7.00	10.60	15.00

CYLINDERS OR WORKING BARRELS, FIGS. 1230, 1231, 1235, 1236, 1267, 1268.—Continued.

No.	0	1	2	3	4	5	6	8	10	12	16	24
DIAMETER CYLINDER, INCHES	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6	8
"BB," Brass Cage and Valve Plunger, no rod	$2.50	$2.50	$2.75	$2.75	$3.00	$3.75	$4.50	$6.00	$8.00	$10.50	$15.00	$22.50
"BB," All Brass Plunger, no rod	3.00	3.00	3.25	3.50	4.00	5.00	6.00	8.00	10.50	14.00	20..00	30.00
Plunger Rod only	.15	.15	.15	.15	.15	.15	.15	.15	.20	.20	20	.20
Iron Plunger Cage	.35	.35	.35	.40	.45	.50	.60	.70	.80	.90	1.00	....
Brass Plunger Cage	.75	.75	.75	.80	.90	1.00	1.25	1.40	1.60	1.75	2.00	....
Iron Poppet Valve	.10	.10	.10	.10	.15	.15	.15	.15	....	....	......	....
Brass Poppet Valve	.20	.20	.20	.20	.30	.30	.30	.30	.40	.40	.40	....
Iron "AA," Plunger Follower (no leather)	.35	.35	.35	.40	.45	.50	.60	.70	....	....	....	....
Brass "AA," Plunger Follower (no leather)	.75	.75	.75	.80	.90	1.00	1.25	1.40	....	....	....	....
Iron "BB," Plunger Follower (no leather)	.75	.80	.85	.90	1.00	1.25	1.50	2.00	2.50	3.50	5.00	7.50
Brass "BB," Plunger Follower (no leather)	1.50	1.60	1.70	1.80	2.00	2.50	3.00	4.00	5.00	7.00	10.00	15.00
Iron "BB," Plunger Follower Ring	.25	.25	.25	.25	.30	.35	.40	.50	.60	.75	1.00	1.50
Brass "BB," Plunger Follower Ring	.50	.50	.50	.50	.60	.70	.80	1.00	1.25	1.50	2.00	3.00
Crimped Plunger Leather, each	.15	.15	.15	.20	.25	.30	.35	.45	.55	.60	.75	1.25
Leather Lower Valve with Weight	.25	.25	.25	.25	.25	.35	.35	.35	.50	.50	.50	1.00
Lower Valve Leather only	.15	.15	.15	.15	.15	.20	.20	.20	.30	.30	.30	.60
Lower Valve Weight	.10	.10	.10	.10	.10	.15	.15	.15	.20	.20	.20	.40
"Universal" Bronze Valve and Seat complete	1.25	1.25	1.25	1.25	1.25	1.75	1.75	2.50	2.50	....	....	....
Bronze Seat and Cage for above	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.75	.175	....	....	....
Bronze Cover for above	.25	.25	.25	.25	.25	.35	.35	.50	.50	....	....	....
Poppet Valve with Leather Face for above	.25	.25	.25	.25	.25	.35	.35	.50	.50	....	....	....
Top Attachment, iron	.75	.75	.75	.75	.75	1.00	1.00	1.25	1.50	1.75	2.50	5.00
Top Attachment, brass	2.25	2.25	2.25	2.25	2.25	3.00	3.00	3.75	4.50	5.25	7.50	15.00
Bottom Attachment, iron	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.50	1.75	2.00	2.75	5.50
Bottom Attachment, brass	3.00	3.00	3.00	3.00	3.00	3.75	3.75	4.50	5.25	6.00	8.25	16.50
Long Connecting Bolts, Figs. 1267, 1268	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Leather Ring Packing	.15	.15	.15	.15	.15	.20	.20	.20	.25	.25	.25	.50

GOULDS "SYPHON" FORCE PUMPS, FIGS. 514½, 776½.

DIAMETER CYL., IN.	2	2½	3	3½	4	4½	5	6
Air Chamber	$6.00	$6.00	$6.00	$9.00	$9.00	$20.00	$20.00	$25.00
Brass Gland	.75	.75	.75	1.00	1.00	1.50	1.50	1.50
Air Chamber Tube and Cap, Fig. 514½	1.00	1.00	1.00	1.25	1.25	1.50	1.50	1.50
Air Chamber Tube, Fig. 776½	.30	.30	.30	.30	.35	.35	.35	.50
Air Chamber Cap, Fig. 776½	1.00	1.00	1.00	1.25	1.25	1.25	1.50	1.50
Check Valve Case	1.00	1.00	1.00	1.25	1.25	5.00	5.50	6.00
Check Valve Nut	.50	.50	.50	.75	.75	1.25	1.25	1.50
Check Valve Brass Tube	1.00	1.00	1.00	2.00	2.00	3.50	3.50	4.00
Check Valve complete	.25	.25	.25	.35	.35	.50	.50	.50
Check Valve Leather	.15	.15	.15	.20	.20	.30	.30	.30
Check Valve Weight	.10	.10	.10	.15	.15	.20	.20	.20
Check Valve Screw and Washer	.05	.05	.05	.05	.05	.05	.05	.05
Lower Valve and parts same as Check Valves	......	......	......	......	......	......	......	......
Outside Cyl., 8-in. Stroke	7.50	7.50	7.50	10.00	10.00	......	......	......
Outside Cyl., 10-in. Stroke	.....	10.00	10.00	13.00	13.00	20.00	20.00	25.00
Outside Cyl., 12-in. Stroke	.....	12.00	12.00	16.00	16.00	22.50	22.50	27.50
Hand Hole Plate	.50	.50	.75	.75	1.00	1.00	1.25	1.25
Hand Hole Plate Packing	.20	.20	.20	.20	.20	.25	.25	.25
Inside Cylinder, Brass-Lined, 8-in. Stroke	6.00	6.00	6.50	8.00	10.00			
Inside, Cylinder, Brass-Lined, 10 in. Stroke	......	7.00	7.50	10.00	12.50	15.00	17.50	20.00
Inside Cylinder, Brass-Lined, 12-in. Stroke	......	8.00	8.50	11.50	15.00	17.50	20.00	22.50
Inside Cylinder, Bottom Attachment	.75	.75	.75	1.00	1.25	2.50	3.00	4.00
Brass Valve Seat	.50	.50	.50	.50	.75	1.00	1.00	1.25

GOULDS "SYPHON" FORCE PUMPS, FIGS. 514½, 776½.—Continued.

DIAMETER CYL., IN.	2	2½	3	3½	4	4½	5	6
Brass Plunger, complete, no rod	$2.45	$3.20	$3.85	$4.75	$5.50	$6.40	$7.50	$8.50
Brass Plunger Cage	.90	1.05	1.35	1.80	2.10	2.25	2.65	3.00
Brass Plunger Follower	1.30	2.00	2.20	2.60	3.00	3.50	4.00	5.00
Brass Poppet Valve	.20	.20	.30	.30	.30	.40	.40	.40
Plunger Leather or Packing	.15	.15	.15	.20	.20	.30	.30	.30
Brass Cased Plunger Rod	1.75	1.75	1.75	2.00	2.00	2.50	2.50	2.50
Suction Flange	.75	.75	1.00	1.25	1.25	2.50	3.00	4.00
Brass Drip Plug	.25	.25	.25	.25	.25	.25	.25	.25
Forked Rod	1.00	1.00	1.00	1.00	1.00	2.50	2.50	2.50
Harp Connection	1.00	1.00	1.00	1.00	1.00	2.50	2.50	2.50
Rubber Packing for Cylinder (2), each	.20	.20	.20	.30	.30	.30	.40	.40
Rubber Packing for Suction Flange	.10	.10	.10	.15	.15	.15	.20	.20
Leather Packing for Bearer, Fig. 776½	.15	.15	.15	.15	.25	.25	.25	.25
Leather Ring Packing for Discharge Tube	.10	.10	.10	.10	.15	.15	.15	.15
Lever or Handle Fig. 776½	1.40	1.40	1.40	1.40	1.40	2.00	2.00	2.00
Fulcrum or Bearer Top, Fig. 776½	1.50	1.50	1.50	1.75	1.75	4.25	4.25	4.25
Bearer Link, Fig. 776½	.50	.50	.50	.75	.75	1.00	1.00	1.00
Short Flat Rod, Fig. 776½	.50	.50	.50	.50	.50	.50	.50	.50
Rod Coupling and Set Screw, Fig. 776½	.25	.25	.25	.25	.25	.25	.25	.25
Hook Spout, Fig. 776½	1.50	1.50	1.50	2.50	2.50	3.50	3.50	4.50
Flange, Link, Lever and Hook Bolts, Fig. 776½	.08	.08	.08	.08	.08	.08	.08	.08
Pin, Fig. 776½	.15	.15	.15	.15	.15	.15	.15	.15
Hand Hole Plate Bolts	.08	.08	.08	.08	.08	.08	.08	.08

GOULDS "PACIFIC" WIND MILL FORCE PUMPS, FIGS. 674, 601.

No.	2	4	6	8
DIAMETER CYLINDER, INCHES	2½	3	3½	4
Lever or Handle	$1.50	$1.50	$2.00	$2.00
Fulcrum or Bearer Top	2.00	2.00	3.50	3.50
Bearer Link	.50	.50	.50	.50
Cylinder	5.00	5.00	7.00	8.00
Brass-Lined Cylinder	7.00	7.00	10.00	12.00
Brass Cylinder	10.00	10.00	15.00	20.00
Iron Top Section for Brass Cylinder Pump	2.75	2.75	4.00	4.75
Base, Fig. 674	2.00	2.00	2.25	2.25
Bottom Cap, Fig. 601	.75	.75	1.25	1.25
Short Flat Rod	.50	.50	.50	.50
Pin	.15	.15	.15	.15
Rod Coupling and Set Screw	.25	.25	.25	.25
Plunger Rod Brass Cased	1.00	1.00	1.25	1.75
Brass Gland	.75	.75	1.00	1.00
Stuffing Box Plug	.25	.25	.25	.25
Plunger Complete, No Rod	.80	1.00	1.30	1.50
Plunger Cage	.40	.50	.65	.75
Plunger Follower	.40	.50	.65	.75
Plunger Poppet Valve, Brass	.20	.20	.30	.30
Brass Plunger Complete, No Rod	1.60	2.00	2.60	3.00
Brass Plunger Cage	.80	1.00	1.30	1.50
Brass Plunger Follower	.80	1.00	1,30	1.50
Plunger Leather or Packing	.15	.15	.20	.20
Lower Valve Complete	.25	.25	.35	.35
Lower Valve Leather	.15	.15	.20	.20
Lower Valve Weight	.10	.10	.15	.15
Lower Valve Screw and Washer	.05	.05	.05	.05
Check Valve and parts same as Lower Valve				
Air Chamber only	2.00	2.00	3.00	3.00
Air Chamber Discharge Nut	.35	.35	.45	.60
Air Chamber Discharge Tube	.50	.50	.75	1.00
Air Chamber Inside Tube	.30	.30	.40	.40
Air Chamber Cock Nut	.50	.50	.75	.75
Cock	2.00	2.00	3.00	3.00
Cock Handle only	.25	.25	.25	.25
Forked Rod	1.50	1.50	1.50	1.50
Hose Tube	.25	.25	.25	25
Leather Ring Packing Cock and Air Chamber Nuts	.10	.10	.10	.10
Leather Ring Packing under Fulcrum	.15	.15	.20	.20
Lever Bearer, Base Flange and Hook Bolts	.08	.08	.08	.08

GOULDS HOUSE FORCE PUMPS.

FIGS. 390, 391, 392, 393 394, 395, 396, 397, 398, 399, 264.

No.	0	2	4	6	8
DIAMETER CYLINDER, INCHES	2	2½	3	3½	4
Lever or Handle	$1.00	$1.00	$1.00	$1.50	$1.50
Fulcrum or Bearer Top	1.25	1.25	1.50	1.75	1.75
Cylinder	3.00	3.50	4.00	6.00	7.50
Brass-Lined Cylinder	5.00	5.50	6.00	9.00	11.50
Brass Cylinders	6.00	7.00	8.00	12.00	15.00
Iron Top Section for Brass Cyl. Pump	2.50	2.75	2.75	4.00	4.75
Base, Figs. 390, 392, 394, 396, 398, 264	1.10	1.10	1.25	1.75	2.00
Bottom Cap. Figs. 391, 393, 395, 397, 399	.50	.50	.50	.85	1.50
Links per pair	.25	.25	.25	.30	.30
Cross Head, including Nuts and Set Screws	.50	.50	.50	.60	.60
Cap	.50	.50	.50	.75	.75
Brass Gland	.75	.75	.75	1.00	1.00
Plunger Rod, Brass Cased	1.00	1.00	1.00	1.25	1.75
Plunger Complete, No Rod	.70	.80	1.00	1.30	1.50
Plunger Cage	.35	.40	.50	.65	.75
Plunger Follower	.35	.40	.50	.65	.75

GOULDS HOUSE FORCE PUMPS.

FIGS. 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 264.—Con.

No.	0	2	4	6	8
DIAMETER CYLINDER, INCHES	2	2½	3	3½	4
Plunger Poppet Valve	$0.10	$0.10	$0.15	$0.15	$0.15
Brass Plunger Complete, No Rod	1.40	1.60	2.00	2.60	3.00
Brass Plunger Cage	.70	.80	1.00	1.30	1.50
Brass Plunger Follower	.70	.80	1.00	1.30	1.50
Brass Plunger Poppet Valve	.20	.20	.30	.30	.30
Plunger Leather or Packing	.15	.15	.15	.20	.30
Lower Valve Complete	.25	.25	.25	.35	.35
Lower Valve Leather	.15	.15	.15	.20	.20
Lower Valve Weight	.10	.10	.10	.15	.15
Brass Valve Plate	.50	.50	.50	.50	.75
Brass Valve Seat and Tube	1.00	1.00	1.25	1.25	1.50
Brass Tubes for Iron or Lead Pipe	.50	.50	.50	.75	1.00
Iron Pipe Nut	.35	.35	.35	.45	.60
Lead Pipe Nut	.25	.25	.25	.35	.50
Drip Plug	.25	.25	.25	.25	.25
Check Valve Case only, Figs 390, 391	1.25	1.25	1.25	1.50	1.50
Check Valve Nut	.35	.35	.35	.45	.60
Check Valve Tube, Brass	.50	.50	.50	.75	1.00
Air Chamber only, Figs. 392, 393, 394, 395, 396, 397, 398, 399	2.00	2.00	2.00	3.00	3.00
Air Chamber Inside Tube	.30	.30	.30	.40	.40
Air Chamber Cap	.35	.35	.35	.45	.45
Air Chamber Discharge Nut	.35	.35	.35	.45	.60
Air Chamber Cock Nut	.50	.50	.50	.75	.75
Air Chamber Brass Tube	.50	.50	.50	.75	1.00
Spout. Figs. 396, 397, 398. 399	.35	.35	.35	.50	.50
Cock Spout, Figs. 394, 395, 264	2.00	2.00	2.00	3.00	3.00
Cock Handle	.25	.25	.25	.25	.25
Hose Tube	.25	.25	.25	.25	.25
Leather Ring Packing	.10	.10	.10	.10	.10
Lever, Bearer, Base, Air Chamber, or Bracket Flange Bolts	.08	.08	.08	.08	.08
Plank, Figs. 391, 393. 395, 397, 399	.75	.75	.75	.75	.75
Extra Connecting Pipe and Rod, Fig. 264, per foot	.50	.50	.50	.50	.50

Cylinder Repairs, Fig. 264, see page 330.

GOULDS "UNIVERSE" FORCE PUMPS, FIGS. 1168 AND 1169.

No.	2	6
DIAMETER CYLINDER, INCHES	2½	3½
Base	$0.85	$1.25
Cylinder (Iron)	1.50	2.25
Cylinder (Brass) Nickel Plated	3.00	4.25
Top for Brass Cylinder Pump	1.00	1.50
Bolt Ring	.35	.50
Spout, 1168	.35	.50
Spout Complete, 1169	2.00	3.00
Stuff Box Cap	.75	1.00
Gland	.75	1.00
Cross Head	.25	.35
Cross Head Link and Lever Pins	.10	.10
Bearer Link	.25	.40
Lever	.75	1.00
Plunger, No rod	.80	1.60
Brass-Cased Plunger Rod	1.00	1.25
Plunger Cage	.35	.60
Plunger Follower	.35	.60
Plunger Poppet Valve	.10	.15
Plunger Leather	.15	.25
G. P. Plug	.15	[illegible]
Thumb Screw	[illegible]	[illegible]
Lower Valve complete	[illegible]	[illegible]

GOULDS HOUSE FORCE PUMPS. SINGLE ACTING, FIGS. 440, 441, 442, 714, 480, 281, 712, 713, 449.

No.	0	2	3	4	5	6
DIAMETER CYLINDER, INCHES	2	2½	2¾	3	3¼	3½
Lever or Handle, Figs. 440, 441, 442, 480, 281	$2.00	$2.00	$2.00	$2.00	$2.00	$2.00
Fulcrum, Figs. 440, 441, 442, 480, 281	2.00	2.00	2.00	2.00	2.00	2.00
Pitman, Figs. 440, 441, 442, 281	1.00	1.00	1.00	1.00	1.00	1.00
Pitman, Figs. 714, 480	2.50	2.50	2.50	2.50	2.50	2.50
Lever Fork for welding, Fig. 480	.75	.75	.75	.75	.75	.75
Guide	.75	.75	.75	.75	.75	.75
Guide Rod	.60	.60	.60	.60	.60	.60
Cross Head	.50	.50	.50	.50	.50	.50
Brass Bowl	1.25	1.25	1.25	1.25	1.25	1.25
Cap	.65	.65	.65	.65	.75	1.00
Brass Gland	.50	.50	.50	.50	.75	.75
Iron Cylinder	3.50	4.00	4.25	4.50	5.00	6.00
Brass-Lined Cylinder	5.50	6.00	6.50	7.00	8.50	10.00
Brass Cylinder	7.00	8.00	8.00	9.00	10.00	12.50
Iron Top Section for Brass Cylinder Pump	2.50	2.75	2.75	2.75	3.25	4.00
Brass-Cased Plunger Rod	1.00	1.00	1.00	1.00	1.25	1.25
Plunger Complete, No Rod	.70	.80	.90	1.00	1.15	1.30
Plunger Cage	.30	.35	.40	.45	.50	.60
Plunger Follower	.30	.35	.40	.45	.50	.60
Plunger Poppet Valve	.10	.10	.10	.10	.15	.15
Brass Plunger Complete, No Rod	1.40	1.60	1.80	2.00	2.30	2.50
Brass Plunger Cage	.60	.70	.80	.90	1.00	1.20
Brass Plunger Follower	.60	.70	.80	.90	1.00	1.20
Brass Plunger Poppet Valve	....	.20	.20	.30	.30	.30
Plunger Leather	.15	.15	.15	.15	.20	.20
Suction or Discharge Valve Complete	.25	.25	.25	.25	.35	.35
Suction or Discharge Valve Leather	.15	.15	.15	.15	.20	.20
Suction or Discharge Valve Weight	.10	.10	.10	.10	.15	.15
Suction or Discharge Valve Screw and Washer	.05	.05	.05	.05	.05	.05
Bottom Cap or Attachment	1.00	1.00	1.00	1.00	1.25	1.25
Nut for I. or L. P. Tube	.35	.35	.35	.35	.45	.45
Brass Tube for I. or L. P	.50	.50	.50	.50	.75	.75
Brass Drip Plug	.25	.25	.25	.25	.25	.25
Machine Bolts, Set Screws, Lag Screws each	.08	.08	.08	.08	.08	.08
Plank, Figs. 440, 441, 442, 714, 712, 713	1.50	1.50	1.50	1.50	1.50	1.50
Check Valve Case, Figs. 440, 480, 712	.75	.75	.75	.75	1.00	1.00
Check Valve Nut, Figs. 440, 480, 712	.35	.35	.35	.35	.45	.45
Check Valve Brass Tube, Figs. 440, 480, 712	.50	.50	.50	.50	.75	.75
Air Chamber, Figs. 441, 442, 714, 281, 713, 449	2.00	2.00	2.00	2.00	3.00	3.00
Air Chamber Inside Tube, Figs. 441, 442, 714, 281, 713, 449	.30	.30	.30	.30	.30	.30
Air Chamber Nut, Figs. 441, 442, 442, 714, 281, 713, 449	.35	.35	.35	.35	.45	.45
Air Chamber Brass Tube, Figs. 441, 714, 281, 713, 449	.50	.50	.50	.50	.75	.75
Cock Spout, Fig. 442	2.00	2.00	2.00	2.00	3.00	3.00
Spout Air Chamber, Fig. 281	2.50	2.50	2.50	2.50	3.50	3.50
Spout Air Chamber Nut	.35	.35	.35	.35	.45	.45
Spout Air Chamber Brass Tube	.50	.50	.50	.50	.75	.75
Rod Coupling and Set Screw, Fig. 281	.25	.25	.25	.25	.25	.25
Bracket with two Caps, Figs. 712, 713	....	5.00	5.00	5.00	6.00	6.00
Bracket only, Figs. 712, 713	....	3.50	3.50	3.50	4.50	4.50
Bracket Caps (2) each, Figs. 712, 713	....	.75	.75	.75	.75	.75
Crank Shaft, Figs. 712, 713	....	3.50	3.50	3.50	5.00	5.00
Pitman, Figs. 712, 713	....	1.50	1.50	1.50	2.00	2.00
Pitman Head and Cap, Fig. 712, 713	1.25	1.25	1.25	1.25	1.25	1.25
Pitman Head only, Figs. 712, 713	.75	.75	.75	.75	.75	.75
Pitman Cap only, Fig. 712, 713	.50	.50	.50	.50	.50	.50

GOULDS HOUSE FORCE PUMPS, SINGLE ACTING, FIGS. 440, 441, 442, 714, 480, 281, 712, 713, 449.—Continued.

No.	0	2	3	4	5	6
DIAMETER CYLINDER, INCHES	2	2½	2¾	3	3¼	3½
Balance Wheel, Figs. 712, 713	....	$7.50	$7.50	$7.50	$7.50	$7.50
Balance Wheel Handle, Figs. 712, 713	....	.50	.50	.50	.50	.50
Balance Wheel, Fig. 449	$12.50	12.50	12.50	12.50	12.50	12.50
Balance Wheel Handle, Fig. 449	1.25	1.25	1.25	1.25	1.25	1.25
Crank and Winch Handle, Fig. 449	2.50	2.50	2.50	2.50	2.50	2.50
Crank only, Fig. 449	1.25	1.25	1.25	1.25	1.25	1.25
Winch Handle, Fig. 449	1.25	1.25	1.25	1.25	1.25	1.25
Crank Shaft, Fig. 449	3.50	3.50	3.50	3.50	3.50	3.50
Crank Shaft Box and Cap (2) each, Complete, Fig. 449	2.00	2.00	2.00	2.00	2.00	2.00
Crank Shaft Box only (2), each	1.25	1.25	1.25	1.25	1.25	1.25
Crank Shaft Cap only (2), each	.75	.75	.75	.75	.75	.75
Pitman, Fig. 449	1.50	1.50	1.50	1.50	1.50	1.50
Pitman Head and Cap, Fig. 449	1.25	1.25	1.25	1.25	1.25	1.25
Pitman Head only, Fig. 449	.75	.75	.75	.75	.75	.75
Pitman Cap only, Fig. 449	.50	.50	.50	.50	.50	.50

GOULDS DOUBLE-ACTING FORCE PUMPS, FIGS. 271, 272, 273, 450 AND 452.

No	0	1	2	3	4	6	8	10
DIAMETER CYL., INCHES	2	2¼	2½	2¾	3	3½	4	4½
Lever or Handle, Figs. 271, 272, 273	$2.00	$2.00	$2.00	$2.00	$2.00	$3.00	$3.00	$3.00
Fulcrum, Figs. 271, 272, 273	2.00	2.00	2.00	2.00	2.00	2.50	2.50	2.50
Pitman, Figs. 271, 272, 273	1.00	1.00	1.00	1.00	1.00	....	....	....
Pitman Straps (2) each	....	....	....	....	....	1.00	1.00	1.00
Guide	.75	.75	.75	.75	.75	1.50	1.50	1.50
Guide Rod	.60	.60	.60	.60	.60	1.00	1.00	1.00
Cross Head	.50	.50	.50	.50	.50	.75	1.00	1.00
Brass-Cased Piston Rod	1.00	1.00	1.00	1.00	1.00	1.25	1.75	2.25
Cylinder	4.00	4.00	5.50	6.00	6.50	8.00	11.00	14.00
Brass-Lined Cylinder	6.00	6.00	8.25	9.00	9.75	12.00	16.50	21.00
Brass Cylinder	15.00	16.00	17.00	18.00	22.50	27.50	30.00	45.00
Cylinder Brass Bowl	1.25	1.25	1.25	1.25	1.25	1.50	1.75	1.75
Cylinder Brass Gland	.50	.50	.50	.50	.75	1.00	1.00	1.00
Cylinder Head of Cap	.65	.65	.65	.65	.65	1.00	1.25	1.25
Piston Complete, No Rod	.75	.75	.75	1.00	1.10	1.45	1.80	2.60
Piston Plates (3) each	.15	.15	.15	.20	.20	.25	.30	.50
Crimped Piston Packings (2) each	.15	.15	.15	.20	.25	.35	.45	.55
Brass Piston Complete	1.50	1.50	1.50	2.00	2.20	2.90	3.60	5.20
Brass Piston Plates, each	.50	.50	.50	.65	.75	1.00	1.20	1.75
Bottom Attachment	1.50	1.50	1.50	1.50	1.50	1.75	2.25	2.75
Nut for Iron or Lead Pipe Tube	.35	.35	.35	.35	.35	.45	.60	.75
Brass Tube for Iron and Lead Pipe	.50	.50	.50	.50	.50	.75	1.00	1.25
Suction or Discharge Valve Complete	.75	.75	.75	.75	.75	1.05	1.05	1.05
Suction or Discharge Valve Leather	.50	.50	.50	.50	.50	.70	.70	.70
Suction or Discharge Valve Weights (2) each	.10	.10	.10	.10	.10	.15	.15	.15
Suction or Discharge Valve Screws and Washers	.05	.05	.05	.05	.05	.05	.05	.05
Fig. 271, Check Valve Case	.75	.75	.75	.75	.75	1.00	1.50	2.00
Fig. 271, Check Valve Nut	.35	.35	.35	.35	.35	.45	.60	.75
Fig. 271, Check Valve Tube	.50	.50	.50	.50	.50	.75	1.00	1.25
Figs. 272, 273, 450 Air Chamb'r	2.00	2.00	2.00	3.50	3.50	5.00	6.50	8.00
Figs. 272, 273, 450 Air Chamber Inside Tube	.30	.30	.30	.30	.30	.40	.40	.40

GOULDS DOUBLE ACTING FORCE PUMPS, FIGS. 271, 272, 273, 450 AND 452.—Continued.

No.	0	1	2	3	4	6	8	10
DIAMETER CYL., IN.	2	2¼	2½	2¾	3	3½	4	4½
Figs. 272, 273, 450, Air Chamber Discharge Nut	$0.35	$0.35	$0.35	$0.35	$0.35	$0.45	$0.60	$0.75
Figs. 272, 273, 450, Air Chamber Discharge Tube	.50	.50	.50	.50	.50	.75	1.00	1.25
Fig. 273, Cock	2.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00
Fig. 273, Cock Nut	.50	.50	.50	.50	.50	.75	.75	.75
Fig. 273, Hose Attachment	.25	.25	.25	.25	.25	....	....	....
Fig. 273, Hose Tube	....	....	....	....	....	.35	.35	.35
Fig. 273, Hose Tube Nut	....	....	....	....	....	.35	.35	.35
Fig. 450, Balance Wheel	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50
Fig. 450, Balance Wheel Handle	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Fig. 450, Crank and Winch Handle	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Fig. 450, Crank only	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Fig. 450, Winch Handle only	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Fig. 450, Crank Shaft	3.50	3.50	3.50	3.50	3.50	5.00	5.00	5.00
Fig. 450, Crank Shaft Box and Cap (2), each complete	2.00	2.00	2.00	2.00	2.00	2.50	2.50	2.50
Fig. 450, Crank Shaft Box only (2), each	1.25	1.25	1.25	1.25	1.25	1.75	1.75	1.75
Fig. 450, Crank Shaft Cap only (2), each	.75	.75	.75	.75	.75	.75	.75	.75
Fig. 450, Pitman	1.50	1.50	1.50	1.50	1.50	2.00	2.00	2.00
Fig. 450, Pitman Box and Cap	1.25	1.25	1.25	1.25	1.25	1.50	1.50	1.50
Fig. 450, Pitman Box only	.75	.75	.75	.75	.75	1.00	1.00	1.00
Fig. 450, Pitman Cap only	.50	.50	.50	.50	.50	.50	.50	.50
Fig. 450, Brass Oil Cup	.50	.50	.50	.50	.50	.50	50	.50
Figs. 271, 272, 273, 450, Plank	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Flange Bolts, Set Screws, Lag Screws and Cap Screws	.08	.08	.08	.08	.08	.08	.08	.08
Fulcrum Bolt	.20	.20	.20	.20	.20	.20	.20	.20
Pins or Bolts for Pitman (2), each	.15	.15	.15	.15	.15	15.	.15	.15
Leather Ring Packing	.10	.10	.10	.10	.10	.10	.10	.10
Pitman, Fig. 452	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Plank, Fig. 452	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Air Chamber, Fig. 452	2.00	2.00	2.00	3.50	3.50	5.00	6.50	8.00
Air Chamber Inside Tube, Fig. 452	.30	.30	.30	.30	.30	.40	.40	.40
Air Chamber Discharge Nut, Fig. 452	.35	.35	.35	.35	.35	.45	.60	.75
Air Chamber Discharge Tube, Fig. 452	.50	.50	.50	.50	.50	.75	1.00	1.25

GOULDS HYDRAULIC RAMS, FIGS. 345, 345½, 346, 346½.

No.	2	3	4	5	6	7	8
Impetus Valve and Case Complete	$4.00	$4.50	$6.50	$10.00	$14.00	$22.00	$32.50
Impetus Valve and Stem, with Nut Bumper only	1.50	1.75	2.75	4.00	6.00	9.50	12.50
Impetus Valve only	1.25	1.50	2.25	3.50	5.00	7.50	6.00
Impetus Valve Stem, with Nut and Set Screw only, Figs. 346, 346½	....	....	....	....	....	....	5.00
Impetus Valve Stem Brass Nut only	.25	.25	.35	.50	.50	.75	1.00
Impetus Valve Stem Rubber Bumper only	.10	.10	.10	.10	.15	.15	.15
Impetus Valve Stem Cotter Pin only	.05	.05	.05	.10	.10	.15	.15
Impetus Valve Case Adjustable Nut and Lock Nut	2.25	2.75	4.00	5.50	7.00	10.00	20.00
Impetus Valve Case only	$1.50	$2.00	$3.00	$4.00	$6.00	$7.00	$12.00
Impetus Valve Case Cover	....	....	....	....	....	....	5.00
Impetus Valve Case Surface Packing	.10	.10	.15	.20	.25	.35	.35
Impetus Valve Case Cover Bolts (6) each	....	....	....	....	....	....	.08
Brass Studs, or Bolts and Nuts for Impetus Valve Case Cover (each)	.20	.20	.20	....	....	....	....
Impetus Valve Case Bolts or Studs and Nuts (each)	....	....	....	.08	.08	.08	.08
Impetus Valve Case Adjusting Nut (brass)	.50	.50	.75	1.00	1.25	2.00	3.00
Impetus Valve Case Lock Nut (brass)	.25	.25	.25	.50	.50	.75	1.00

GOULDS "ALERT" DOUBLE-ACTING FORCE PUMP, FIG. 747.

No.	2	4	6	8
DIAMETER CYLINDER, INCHES	2½	3	3½	4
Lever and Wood Handle	$1.50	$1.50	$1.50	$1.50
Wood Handle only	.25	.25	.25	.25
Link	.50	.50	.75	.75
Cross Head	.35	.35	.50	.50
Air Chamber	2.50	2.50	3.50	3.50
Valve Plate	1.75	1.75	2.75	2.75
Cylinder	4.50	5.50	7.00	9.00
Brass-Lined Cylinder	7.00	8.50	10.50	13.00
Front Head	1.25	1.50	1.75	2.25
Back Head	.75	1.00	1.25	1.75
Brass Gland	.40	.40	.50	.50
Brass Cap	.75	.75	.75	.75
Brass-Cased Piston Rod	1.00	1.00	1.25	1.25
Piston Complete, No Rod	.75	1.10	1.45	1.80
Piston Plates (3), each	.15	.20	.25	.30
Crimped Piston Packings (2) each	.15	.25	.35	.45
Nut on end Piston Rod	.05	.05	.05	.05
Suction or Discharge Valve Complete	.75	.75	1.05	1.05
Suction or Discharge Valve Leather	.50	.50	.70	.70
Suction or Discharge Valve Weights (2) each	.10	.10	.15	.15
Suction or Discharge Valve Screw and Washers	.05	.05	.05	.05
Brass Drip Plugs, each	.25	.25	.25	.25
Suction Pipe Plug	.25	.25	.35	.35
Discharge Pipe Plug	.15	.15	.25	.25
Air Chamber, Link, Lever and Plank Bolts	.08	.08	.08	.08
Plank	.50	.50	.50	.50

GOULDS "NEW DELUGE" PUMPS, FIGS. 829, 836.

DIAMETER CYLINDER, INCHES	6	8½
Wrought Iron Lever	$3.00	$3.50
Lever Socket	1.25	1.50
Large Steel Pin	.75	.75
Small Steel Pin	.50	.50
Cylinder, Brass-Lined	10.50	13.50
Cylinder, Brass Lining only	2.00	3.50
Plunger Complete, including Valve	3.50	4.00
Plunger only, No Valve	2.50	3.00
Plunger Valve or Poppet	1.00	1.00
Lower Valve Complete	1.00	1.00
Base only, No Suction Flange, Fig. 829	5.00	6.00
Suction Flange, Fig. 829	1.25	1.50
Base only, No Suction Flange, Fig. 836	6.00	7.00
Suction Flange, Fig. 836	1.25	1.50
Leather Packing, either Base or Suction Flange	.60	.75
Rubber Packing, Plunger or Lower Valve	.40	.50
Rubber Bumpers	.40	.40
Bolts for Base or Suction Flange	.15	.15

"CHALLENGE" D. A. FORCE PUMPS, FIGS. 494, 470, 562, 774, 581, 770. 604.

No.	2	4	8	12	16
DIAMETER CYLINDER, INCHES	2½	3	4	5	6
Air Chamber	$2.50	$2.50	$3.00	$5.00	$6.00
Brass-Lined Cylinder and Two Valve Seats.	11.00	11.00	12.00	16.00	20.00
Brass Valve Seats (4) each	.50	.50	.65	.80	1.00
Base with Two Brass Valve Seats	5.00	5.00	5.00	7.50	9.00
Front Cylinder Head only	1.25	1.25	1.25	5.00	6.00
Back Cylinder Head only	1,00	1.00	1.00	4.00	5.00
Brass Stuffing Box Cap	.50	.50	.75	1.00	1.25
Brass Stuffing Box Gland	.40	.40	.50	.75	.85
Leather Packed Piston and Rod complete, except Fig. 604	2.25	2.60	3.30	4.25	4.70
Brass-Cased Plunger Rod only, except Figs. 604	1.50	1.50	1.50	2.00	2.00
Leather Packed Piston, complete, No Rod..	.75	1.10	1.80	2.25	2.70
Piston Plates (3) each	.15	.20	.30	.35	.40
Piston Crimp Leather (2) each	.15	.25	.45	.60	.75
Nut on Piston Rod	.05	.05	.05	.05	.05
Fibre-Packed Piston, complete, No Rod	1.75	1.75	2.50	3.50	5.00
Spring-Packed Piston, complete, No Rod	7.50	7.50	10.00	12.50	17.50
Leather-Packed Brass Piston, complete, No Rod	2.50	2.50	3.50	5.00	7.50
Fibre-Packed, Brass Piston, complete, No Rod	4.50	4.50	7.00	10.00	15.00
Spring-Packed Brass Piston, complete, No Rod	10.00	10.00	15.00	22.50	30.00
Brass Poppet Valves (4) each	.50	.50	.65	.80	1.00
Leather Valves Complete (2) each	1.25	1.25	......	......	......
Leather Valves only (2) each	.75	.75	......	......	......
Leather Valve Weights only (4) each	.25	.25	......	......	......
Leather Valve Screw and Washer	.05	.05	......	......	......
Horse-Shoe Links, Front or Back, each	.50	.50	.75	1.25	1.25
Knuckle for Plunger Rod	.50	.50	.50	.75	.75
Lever Sockets, Front or Back, each	1.50	1.75	1.75	2.00	2.25
Lever and Wood Handle	1.50	1.50	1.50	2.25	2.25
Lever only	1.20	1.20	1.20	1.75	1.75
Wood Handle only	.30	.30	.30	.50	.50
Hose Wrench, Figs. 494, 470, 562, 774, 604	.25	.25	.25	.50	.50
Brass Suction Bushing	1.00	1.00	1.25	1.50	2.25
Brass Discharge Bushing	1.00	1.00	1.00	1.25	1.50
Brass Half Suction Coupling	.55	.55	.78	1.33	2.67
Brass Suction Swivel or Nut only	.35	.35	.50	.85	1.75
Brass Suction Hose Tube	.20	.20	.28	.48	.92
Brass Half Discharge Coupling	.50	.50	.55	.78	1.33
Brass Discharge Swivel or Nut only	.30	.30	.35	.50	.85
Brass Discharge Hose Tube	.20	.20	.20	.28	.48
Iron Pipe Suction Nut	.35	.35	.45	.60	.75
Iron Pipe Discharge Nut	.35	.35	.35	.45	.60
Brass Lead Pipe Elbow and Unions, each	1.25	1.25	1.50	......	......
Brass Drip and Priming Plugs	.25	.25	.25	.35	.35
Rubber Packing, Base or Air Chamber	.30	.30	.30	.50	.50
Rubber Packing, Cylinder Heads	.20	.20	.20	.30	.30
Long Bolt for Horse-Shoe Link	.25	.25	.25	.30	.40
Lever Bolts	.15	.15	.15	.20	.20
Cylinder Head Bolts	.08	.08	.08	.08	.08
Long Cylinder Bolts with Brass Nuts (4), each complete	.35	.35	.35	.35	......
Long Cylinder Bolts only (4) each	.20	.20	.20	.20	......
Short Cylinder Bolts with Brass Nuts (8) each complete	......	......	......	.35	.35
Short Cylinder Bolts only (8) each	......	......	......	.20	.20
Brass Nuts for Cylinder Bolts, each	.15	.15	.15	.15	.15
Fig. 470, Plank	1.00	1.00	1.00	1.00	......
Fig. 470, Plank Coach Screws (4) each	.08	.08	.08	.08	......
Fig. 562, Cross Bar	......	......	......	.75	.75
Fig. 562, Cross Bar Pins and Spring Cotters.	......	......	......	.25	.25

"CHALLENGE" D. A. FORCE PUMPS, FIGS. 494, 470, 562, 774, 581, 770, 604.—Continued.

No.	2	4	8	12	16
DIAMETER CYLINDER, INCHES	2½	3	4	5	6
Figs. 581, 582, Suction Elbow	......	......	......	......	$2.75
Figs. 581, 582, Suction Pipe Flange	......	......	......	......	1.25
Figs. 581, 582, Brass Priming Plug	......	......	......	......	.50
Figs. 581, 582, Brass Suction Flange	......	......	......	......	1.50
Figs. 581, 582, Brass Hose Sleeve	......	......	......	......	3.00
Figs. 581, 582, Hose Discharge Piece	......	......	......	......	1.00
Figs. 581, 582, Hose Discharge Piece Bolt	......	......	......	......	.50
Figs. 581, 582, Hose Discharge Nut	......	......	......	......	.50
Figs. 581, 582, Brass Half Discharge Coupling	......	......	......	......	1.33
Figs. 581, 582, Brass Discharge Swivel or Nut only	......	......	......	......	.85
Figs. 581, 582, Brass Discharge Hose Tube	......	......	......	......	.48

GOULDS "THRESHER" TANK FORCE PUMP, FIG. 1145.

No.	12
DIAMETER CYLINDER, INCHES	5
Cylinder	$8.00
Cylinder Front Head	1.25
Cylinder Back Head	1.00
Cylinder Top Caps or Plugs, Leather-Faced, (2) each	.50
Cylinder Poppet Valves, Leather-Faced, (4) each	.25
Cylinder Brass Stuffing Box	.75
Plunger and Rod Complete	3.25
Plunger Rod only	1.00
Plunger Complete, no Rod	2.25
Plunger Disc	.35
Plunger Plates, (2) each	.35
Plunger Crimped Packings, (2) each	.60
Knuckle for Plunger Rod	.50
Link	.50
Lever Socket	1.50
Wood Lever	1.00
Suction Nut	.50
Suction Hose Tube	.35
Spout Nut	.50
Spout	.75
Discharge Nut	.35
Discharge Hose Tube	.35
Rubber Packing, Front and Back Cylinder Head, each	.20
Leather Ring Packing for Plugs and Poppet Valves, each	.10
Brass Thumb Screws	.25
Bolts and Nuts, each	.08

GOULDS DIAPHRAGM SUCTION PUMPS, FIGS. 1222 AND 1223.

DIAMETER OF DIAPHRAGM, 13 INCHES	Fig. 1222.	Fig 1223.
Base	$4.50	$6.00
Head or Top Section	3.80	3.80
Plunger Top or Standard	1.00	1.00
Plunger Bottom or Spider	.90	.90
Brake or Wrought Iron Lever	2.50	2.50
Brake or Lever Socket	.70	.70
Socket Cross Bar	.45	.45
Brass Socket Rocker Pin and Nuts	.50	.50
Plunger Valve	1.25	.65
Plunger Valve Rubber	.45	.45
Plunger Tee Bolts and Nuts, (2) each	.35	.35
Long Bolt and Nut, (4) each	.25	.25
Lower Valve	1.25	......
Lower Valve Rubber	.40	......
Brass Suction Valve Case	......	2.25
Brass Suction Valve Weight	......	.50
Brass Suction Valve Binders, (2) each	......	.25

GOULDS DIAPHRAGM SUCTION PUMPS, FIGS. 1222, AND 1223.—Cont.

DIAMETER OF DIAPHRAGM, 18 INCHES	Fig. 1222	Fig. 1228.
Suction Valve Rubber	....	$0.40
Suction Valve Brass Binder Screws, (4) each	....	.10
Suction Valve Case Brass Bolts, (4) each	....	.20
Suction Valve Case Rubber Packing	....	.40
Diaphragm	$2.50	2.50

GOULDS ROTARY FORCE PUMPS, FIGS. 297, 297½, 464, 665, 821, 819.

No	1	2	3	4	5	6
Case, Cover, Stuffing Boxes and Caps	$8,00	$9.00	$10.00	$15.00	$17.00	$20.00
Case, only	5 00	6.00	7.00	10.00	11.00	18.50
Cover, only	2.50	2.50	2.50	3.50	4.00	4.50
Cams, each	8.50	4.00	4.50	6.00	6.50	9.00
Stuffing Boxes	.50	.50	.50	.75	.75	.75
Tight Caps (3) each	....	....	....	.50	.50	.50
Base and Drip Plug, Figs. 297, 297½, 819	3.00	8.00	8.50	6.00	7.00	8.50
Base and Drip Plug, Fig 665	8.50	3.50	4.25	7.50	9.00	....
Base and Drip Plug, Fig. 821	8.50	8.50	4.25	7.50	9.00	....
Lower Valve Complete	.25	.25	.25	.35	.85	.50
Lower Valve Leather, only	.15	.15	.15	.20	.20	.30
Lower Valve Weight	.10	.10	.10	.15	.15	.20
Lower Valve Screw and Washer	.05	.05	.05	.05	.05	.05
Spout and Cap	1.00	1.00	1.50	2.00	2.50	3.25
Spout, only	.75	.75	.75	1.50	2.00	2.50
Balance Wheel, 14½-in. Dia	1.00	1.00	1.00	....	....	....
Balance Wheel, 20.in. Dia	2.00	2.00	2.00	8.00	3.00	....
Balance Wheel 36-in Dia	....	....	....	6.00	6.00	6.00
Brass Drip Plugs and Priming Plugs	.25	.25	.25	.25	.25	.25
Round Head Machine Screws	.05	.05	.05	.05	.05	.05
Bolts and Set Screws	.08	.08	.08	.08	.08	.08
Metallic Lower Valve extra	1.00	1.00	1.00	1.50	1.75	2.50
Fig. 821, Suction Hose Half Coupling	.50	.50	.50	.90	1.50	....
Fig. 821, Swivel, only, Suction Coupling	.25	.25	.25	.40	.75	....
Fig. 821, Hose Tube, only, Suction Coupling	.25	.25	.25	.40	.75	....
Fig. 819, Pulley	5.25	5.25	5.25	13.80	18.80	....
Fig. 819, Outside Standard and Cap	2.00	2.00	2.00	5.00	5.00	....
Fig. 819, Outside Standard, only	1.50	1.50	1.50	4.25	4.25	....
Fig. 819, Outside Standard Cap, only	.50	.50	.50	.75	.75	....
Fig. 464, Crank	.50	.50	.50	....	....	....
Fig. 464, Suction Nut	.35	.35	.35	....	....	....
Fig. 464, Suction Pipe	1.00	1.00	1.25	....	....	....
Fig. 464, Barrel Attachment or Holder	2.00	2.00	2.00	....	....	....
Fig. 464, Hook	.35	.35	.35	....	....	....
Fig. 464, Discharge Hose Couplings, per pair	.87	.87	.87	....	....	....
Fig. 464, Hose Bands per pair	.05	.05	.05	....	....	....

GOULDS POWER ROTARY FORCE PUMP, FIGS. 1185½ AND 1281.

No	1	2	3	4	5	6
Case, Cover, Stuffing Boxes and Caps	$8.00	$9.00	$10.00	$15.00	$17.00	$20.00
Case only	5.00	6.00	7.00	10.00	11.00	13.50
Cover Only	2.50	2.50	2.50	3.50	4.00	4.50
Stuffing Boxes	.50	.50	.50	.75	.75	.75

GOULDS POWER ROTARY FORCE PUMP, FIGS. 1185½ and 1281.—Cont.

No	1	2	3	4	5	6
Tight Caps, 8 (each)	....	....	....	$0.50	$0.50	$0.50
Cam with Short Shaft	$3.50	$4.00	$4.50	6.00	6.50	9.00
Cam with Long Shaft	5.00	5.50	6.00	7.50	8.00	12.00
Intermediate Base	1.50	1.50	1.75	....	....	....
Bed Plate	4.00	4.50	5.00	7.00	8.00	20.00
Valve Plate	....	....	....	1.50	1.50	3.00
Spout and Cap	1.00	1.00	1.50	2.00	2.50	3.25
Spout only	.75	.75	1.25	1.50	2.00	2.50
Cap only	.35	.35	.35	.50	.50	.75
Pulleys, each	2.50	2.50	2.50	4.00	4.00	7.50
Outside Standard Complete	1.00	1.25	1.25	2.00	2.50	5.50
Outside Standard only	....	....	....	1.25	1.75	4.50
Outside Standard Cap only	....	....	....	.75	.75	1.00
Lower Valve	.25	.25	.25	.35	.35	.50
Lower Valve Leather	.15	.15	.15	.20	.20	.30
Lower Valve Weight	.10	.10	.10	.15	.15	.20
Lower Valve Screw and Washer	.05	.05	.05	.05	.05	.05
Brass Drip and Priming Plugs	.25	.25	.25	.25	.25	.25
Round Head Machine Screws	.05	.05	.05	.05	.05	.05
Bolts and Set Screws	.08	.08	.08	.08	.08	.08
Metallic Lower Valve	1.00	1.00	1.00	1.50	1.75	2.50

GOULDS SEMI-ROTARY CLOCK FORCE PUMPS, FIGS. 965, 982, 985, 995, 998 AND 1149.

No	1	2	3	4	5	6
Iron Case	$1.50	$1.75	$2.50	$3.00	$3.50	$4.50
Brass Case	3.50	4.00	5.75	6.75	8.00	11.00
Iron Cover	.45	.55	.75	.85	1.00	1.20
Brass Cover	1.00	1.25	1.50	1.85	2.25	2.75
Iron Gland Cap	.15	.15	.25	.35	.50	.65
Brass Gland Cap	.35	.35	.60	.75	1.10	1.35
Brass Gland	.25	.30	.35	.35	.40	.50
Suction Valve Frame or Seats	.75	.90	1.10	1.25	1.50	2.00
Suction Valves, (2) each	.25	.30	.35	.40	.45	.50
Discharge Valve Frame or Seats	1.00	1.25	1.50	2.00	2.50	3.50
Discharge Valves, (2) each	.25	.30	.35	.40	.45	.50
Discharge and Suction Valve Cotter Pins, (4) each	.05	.05	.08	.08	.10	.10
Discharge Flange	.15	.20	.25	.35	.35	.50
Suction Flange	.15	.20	.25	.35	.35	.50
Flange and Case Cover Bolts, each	.08	.08	.08	.08	.08	.08
Wrought Iron Lever	.25	.30	.35	.45	.50	.50
Wood Handle	.25	.30	.35	.45	.50	.50
Iron Handle Nut	.05	.05	.05	.08	.08	.08
Wind Mill Crank Arm, Fig. 998	....	....	....	....	....	.75
Wind Mill Stub End, Fig. 998	....	....	....	....	....	1.00
Suction and Discharge Surface Packing, each	.05	.05	.08	.10	.10	.12
Brass Thumb Screw	.10	.10	.10	.10	.10	.10
Discharge Hose Bushing, Fig. 985	.35	....	.35	....	....	....
Discharge Plug, Fig. 985	.04	....	.04	....	....	....
Standard or Bracket, Figs. 995 and 982	1.00	1.25	1.50	2.00	2.50	3.00
Air Chamber only, Fig. 995	....	....	1.50	2.25	3.00	4.00
Air Chamber Tube, Fig. 995	....	....	.15	.20	.25	.30
Air Chamber Tube Nut, Fig. 995	....	....	.35	.35	.35	.45
Air Chamber Spout, Fig. 995	....	....	2.00	2.00	3.00	3.50
Air Chamber Spout Nut, Fig. 995	....	....	.50	.50	.75	.75
Discharge Hose Tube, Fig. 995	....	....	....	....	.25	.25
Discharge Hose Tube Nut, Fig. 995	....	....	....	....	.35	.35
Air Chamber, Fig. 985	2.50	....	3.75	....	....	....
Base, Fig. 985	2.25	....	3.25	....	....	....

GOULDS VERTICAL PISTON PUMPS, FIGS. 1204, 1205.

No.	4	6
DIAMETER CYLINDER, INCHES	3	3½
Air Chamber and Crank Case	$9.00	$11.25
Hand Hole Plate	1.00	1.25
Gland	.50	.75
Cylinder	3.00	4.00
Base	3.25	4.00
Crank Shaft Complete with Arm, Fig. 1204	3.00	3.50
Crank Shaft Complete with Arm, Fig. 1205	4.00	4.50
Crank Shaft Arm	1.00	1.00
Crank Shaft Brass Washer	.10	.10
Crank Shaft Nut	.05	.05
Plunger and Rod Complete	4.00	4.50
Plunger Rod	.75	.75
Plunger Pin	.25	.25
Plunger Complete, No Rod or Pin	3.00	3.50
Plunger Top	1.50	1.75
Plunger Bottom	1.00	1.20
Plunger Brass Poppet Valve	.30	.30
Plunger Crimped Packing	.25	.35
Lower Valve Complete	.35	.35
Lower Valve Leather	.20	.20
Lower Valve Weight	.15	.15
Lower Valve Screw and Washer	.05	.05
Pulley only, Fig. 1204	5.25	5.25
Pulley Handle, Fig. 1204	.25	.25
Pulleys, Fig. 1205, (2) each	5.25	5.25
Shaft Collar, Fig. 1205	.50	.50
Rubber Hand Hole Packing	.35	.35
Sundry Bolts and Set Screw each	.08	.08
Cylinder Packing under Crank Case	.25	.25

GOULDS PORTABLE BRASS AQUAJECT, FIG. 561½.

Handle	$0.50
Brass Plunger Rod	1.00
Air Chamber only	.75
Air Chamber Brass Gland	.25
Air Chamber Ring Packing	.10
Brass Cylinder	2.00
Brass Plunger Complete, No Rod	1.10
Brass Plunger Cage	.50
Brass Plunger Follower	.35
Ball Valve	.10
Plunger Packing	.15
Lower Valve Complete	.25
Lower Valve Leather	.15
Lower Valve Weight	.10
Lower Valve Screw	.05
Stirrup or Foot Piece	.75
Suction Hose Half Coupling, Basket and Bands Complete	1.00
Suction Hose only	.75
Suction Hose Half Coupling	.15
Suction Hose Basket	.25
Suction Hose Bands	.15
Discharge Hose, Half Coupling, Bands and Nozzle	1.75
Discharge Hose only	.75
Discharge Hose Half Coupling	.10
Discharge Hose Pair Bands	.15
Brass Spray Nozzle	.75

GOULDS PORTABLE BRASS FORCE PUMP. FIG. 1129.

Handle Complete	$0.50
Plunger and Rod Complete	1.25
Plunger Rod only	.75
Plunger and Valve	.50

GOULDS PORTABLE BRASS FORCE PUMP. FIG. 1129.—Continued.

Plunger Valve only	$0.15
Air Chamber	1.50
Stuffing Box Cap	.25
Brass Cylinder Body	1.50
Suction Attachment and Valve	.75
Suction Valve only	.15
Foot Rest Complete	1.25
Foot Rest Clamp or Cap only	.20
Foot Rest Standard with Cotter only	1.00
Foot Rest Thumb Screw only	.10
Discharge Hose, Half Coupling, Connection and Nozzle Complete	2.00
Discharge Hose only	.75
Discharge Hose Half Coupling only	.25
Discharge Hose Nozzle Connection only	.25
Discharge or Spray Nozzle only	.90
Hose Bands, per pair	.15

GOULDS DOUBLE-ACTING SPRAY PUMPS. FIGS. 905, 905½, 1012.

No.	2	4
DIAMETER OUTER CYLINDER, Inches	2½	3
Lever	$0.75	$0.80
Link	.40	.40
Brass-Cased Plunger Complete	2.25	2.50
Brass-Cased Plunger Top and Cage only	1.75	2.00
Brass Poppet Valve	.25	.25
Plunger Leather	.15	.15
Plunger Follower	.35	.35
Top Cap or Stuffing Box	.50	.60
Gland	.30	.35
Base	1.25	1.35
Lower Valve Complete	.25	.25
Lower Valve Leather	.15	.15
Lower Valve Weight	.10	.10
Cylinder Chamber, Brass-Lined	2.50	2.75
Lower Valve Screw and Washer	.05	.05
Brass Discharge Bushing	.35	.35
Discharge Plug	.05	.05
Brass Suction Bushing	.50	.65
Brass Suction Basket or Strainer	.50	.65
Malleable Pins and Cotters for Link (2), each	.15	.15
Malleable Pin and Cotter for Lever	.15	.15
Rubber Packing for Top Cap	.10	.10
Square Packing for Stuffing Box	.20	.25
Sundry Bolts each	.08	.08
Suction Pipe for Side of Barrel	.35	.50
Suction Pipe for End of Barrel	.50	.75
Air Chamber, Fig. 905½	1.00	1.25

GOULDS "CRESCENT" YARD HYDRANTS.

FIGS	860	811	813	1123	1040
Stock, two Sides	$2.00	$2.50	......	......	$2.00
Wheel Handle	.40	.40	$0.40	$0.40	
Spring Cutter	.02	.02	.02	.02	
Brass Screw	1.00	1.00	1.00	1.00	
Top Cap	.30	.30	.50	.50	1.00
Spout	.40	.50	.35	.35	.40
Brass Hose Bushing	.25	.25	.25	.25	.25
Knuckle or Socket	.30	.30			
Adjusting Nut	.05	.05			
Plunger Rod Disc	......	......	.15	.15	
Pipe Clamp	......	......	.25	.25	
Spout Elbow	......	......	.15	.15	
Bolts	.10	.10	......	......	.10
Brass Valve Case	1.25	2.00	2.00	1.25	1.25

GOULDS "CRESCENT" YARD HYDRANTS.—Continued.

FIGS.	860	811	818	1123	1040
Brass Plunger, with Packings	$0.80	$1.00	$1.00	$.80	$.80
Brass Swivel	.40	.60	.60	.40	.40
Brass Tube	.35	.50	.50	.35	.85
Plunger Cup Leather	.10	.10	.10	.10	.10
Leather Valve Disc	.02	.02	.02	.02	.02
Screw and Washer	.05	.05	.05	.05	.05
Shield for Valve Case	.40	.40	.40	.40	.40
Lever	......	......	......	......	.65
Locking Piece	......	......	......	......	.50

GOULDS "CRESCENT" STREET WASHERS.

FIGS.	861	812	1240
Top only	$0.80	$1.00	$0.80
Cover	.25	.40	.25
Screw Plate	.20	.20	.20
Key	.20	.20	.20
Brass Hose Bushing	.20	.20	......
Brass Screw	1.00	1.00	1.00
Malleable Knuckle	.30	.30	.30
Adjusting Nut	.02	.02	.02
Brass Valve Case	1.25	2.00	1.25
Brass Plunger with Packings	.80	1.00	.80
Brass Swivel	.40	.60	.40
Brass Tube	.35	.50	.35
Plunger Cup Leather	.10	.10	.10
Leather Valve Disc	.02	.02	.02
Screw and Washer	.05	.05	.05
Machine Screws	.05	.05	.05
Discharge Swivel Elbow Complete	......	......	1.25
Shield for Valve Case	.40	.40	.40

GOULDS "STAR" YARD HYDRANT, FIG. 646.

SIZE	¾ in.	1 in.
Stock Complete, no Pipe or Rod	$4.40	$4.40
Stock only	3.00	3.00
Top Cap	.50	.50
Bolts for ditto each	.08	.08
Spout	.40	.50
Flange for Spout	.10	.10
Wheel Handle	.25	.25
Spring Cotter	.02	.02
Brass Screw	1.00	1.00
Malleable Elbow	.40	.50
Bottom Attachment Lock Nut	.35	.35
Bottom Attachment	.75	.90
Bottom Cap	.25	.30
Brass Valve Seat Complete	2.50	3.75
Brass Valve Seat only	1.50	2.25
Plunger Valve with Packing	1.00	1.50
Top Part Plunger Valve	.40	.60
Bottom Part of Plunger Valve	.60	.90
Plunger Valve Packing only	.15	.20
Leather Valve Disc	.05	.05
Screw and Washer	.05	.05
Nut for Bottom Cap	.05	.05
Brass Swivel	.50	.75
Brass Tube for Iron Pipe	.50	.85
Brass Tube for Lead Pipe	.50	.65

GOULDS "STAR" STREET WASHER, FIG. 647.

SIZE	¾ in.	1 in.
Case and Cover	$1.50	$1.50
Case only	1.00	1.00
Cover only	.40	.40
Inside Plate	.25	.25
Inside Plate Bolts, each	.08	.08
Brass Screw	1.00	1.00
Malleable Discharge Crook	.50	.60
Key	.20	.20
Brass Valve Seat Complete	2.50	3.75
Brass Valve Seat only	1.50	2.25
Plunger Valve with Packing	1.00	1.50
Top Part of Plunger Valve	.40	.60
Bottom Part of Plunger Valve	.60	.90
Plunger Valve Packing only	.15	.20
Leather Valve Disc	.05	.05
Screw and Washer	.05	.05
Brass Swivel	.50	.75
Brass Tube for Iron Pipe	.50	.75
Brass Tube for Lead Pipe	.50	.75
Bottom Cap	.25	.30
Bottom Attachment	.75	.90
Bottom Attachment Lock Nut	.35	.35
Nut for Bottom Cap	.05	.05

GOULDS ADJUSTABLE CURB BOXES. FIGS. 1159 and 1184.

EXTREME LENGTH, INCHES	62	72	84
Cap, Fig. 1159	$0.75	$0.75	$0.75
Brass, Plug, Fig. 1184	.25	.25	.25
Cap, Fig. 1184	.60	.60	.60
Case or Standard	1.25	1.25	1.25
Key or Wrench	.50	.50	.50
Encasing Pipe	.75	1.05	1.25
Wrought Rod with Fork	.50	.60	.75
Malleable Fork only	.10	.10	.10
Brass Spring	.10	.10	.10

GOULDS "SUN" AND "NO-SHOCK" HYDRANTS.

FIGS.	1174	1116
Inlet Tube	$0.50	$0.50
Inlet Nut or Swivel	.60	.60
Inlet Packing	.05	.05
Valve Case	.75	.75
Bottom Attachment	.50	.50
Automatic Check Valve	.30	.30
Guard Case	.50	.50
Guard Case Set Screw	.05	.05
Lock Nut	.35	.35
Base	.75	.75
Top Attachment	.50	.50
Cap	.50	.50
Cap Bolts (2) each	.25	.25
Lever	......	.50
Lever Latch	......	.15
Plunger Complete	1.50	1.50
Plunger Top	.50	.50
Plunger Bottom	.50	.50
Plunger or Valve Nut	.05	.05
Valve Disc	.10	.10
Plunger Crimp	.10	.10
Discharge Spout	.50	.50
Plunger Spring	......	.25
Brass Screw	1.00	......
Wheel Handle	.25	......

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